



## IMMUNE HEALTH PROTOCOLS

A practitioner guide  
to nutrition and the  
immune system

## INVESTIGATING INTOLERANCE

Expert recommendations on the steps to  
take if you suspect food intolerance



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# Welcome



It feels like yesterday that the summer holidays arrived, and life as we know it is put on hold as routines go out the window. But here we are, with our September/October issue, and already, plans are being put in place for what is come next year in terms of the educational offering from the IHCAN Conferences, organised by Target Publishing, which also published *Nutrition I-Mag*.

As students and recent post graduates, you will be fully aware of the importance of continued training and education, and that is what the IHCAN Conferences have been designed to do – they offer an excellent line-up of prestigious speakers, talking on topics that will be of direct relevance to you when you come into practice. They also offer all-important CPD points, and as well as that, they provide a fantastic place for you to network with like-minded Nutritional Therapists.

The IHCAN Conference programme this year has been impressive, and we

are delighted to have seen so many practitioners – both regular attendees and new delegates – through the doors of the Cavendish Conference Centre, in London.

Our September conference is already sold out (although you can buy the recordings afterwards), which leaves just the November event with places left. Turn to page 16 for the lowdown on what you can expect at the event, and then visit [www.ihcanconferences.co.uk](http://www.ihcanconferences.co.uk) to book your place, with discounts offered for students.

And keep an eye on the website as in the coming months, we will be announcing dates and themes for the 2019 offering.

Rachel

RACHEL SYMONDS, EDITOR

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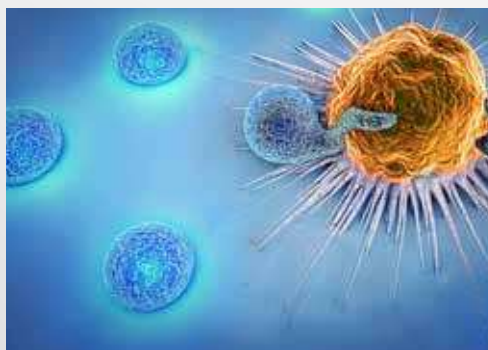
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# GENE LIVING

*"If passion drives you, let reason hold the reins."*

- Benjamin Franklin

**SO  
WHAT  
AM  
I?**

**WELLNESS  
GROUPS.**

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Annie Breen is a Registered Nutritional Therapist with BANT and Practitioner Account Manager for Hifas da Terra, in Edinburgh. She graduated from CNM in Birmingham and is now living and practicing in Edinburgh. Annie is also founder of BeYouMum, a nutritional therapy based coaching programme specialising in mum self-care and postnatal depletion.



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Rose Holmes, Dip.ION, BSc (Hons), PGCE, mBANT, CNHC is a Registered Nutritional Therapist with a special interest in chronic illness, circadian rhythm disruption and healthy ageing. She is the Education and Training Manager at Rio Health and provides training to other practitioners and health professionals on natural therapies.



Benjamin I. Brown

Benjamin I. Brown ND is a naturopath, science writer and speaker. He is the author of *The Digestive Health Solution*, teaches nutritional medicine and speaks internationally, as well as contributing regularly to industry magazines and scientific journals.



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Joanna Lutyens-Scott BA(Hons) DipION FdSc mBANT CNHC is a Nutritional Therapist and writer. Joanna helps people feel empowered and motivated to make positive changes in their diet and lifestyle to achieve their personal optimal health. She is also passionate about integrative medicine and believes that professionals working together to achieve the best health for their patients is key. Joanna works as a content writer at OptiBac Probiotics, where she also gives customers the benefits of her broad knowledge and experience, and runs a private practice in Hampshire.



Wendy Richards

Wendy Richards is a Certified Practitioner in practice and principles of the blood type diet. She is also a Fellow of the institute Of Human Individuality (MIFHI). She represents SWAMI, for the ultimate in personalised nutrition or people who are battling chronic conditions and has been involved in the health and fitness industry for more than 20 years, and is passionate about the use of nutrition in the prevention and treatment of disease and enhancement of longevity.



Rachel Bartholomew

Rachel Bartholomew BA(Hons) Dip ION MBANT NTCC CNHC has practiced as a Nutritional Therapist since completing her study with the Institute of Optimum Nutrition in 2004. With a busy clinical practice in Lancashire, Rachel has a particular interest in children's health and nutrition, with a keen focus on improving nutrition education at an early age. Rachel combines her clinical work with a freelance consultant role for Nutri Advanced, where she regularly produces a wide range of technical articles and newsletter items.



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# News bites

A round-up of the news from the natural health industry.

## Concern as new figures reveal obesity among children reaches record high



New data from Public Health England (PHE) has revealed that severe obesity in children aged 10-

11 has reached an all-time high.

Analysis of the National Child Measurement Programme (NCMP) has revealed that the proportion of children in Year 6 with severe obesity has reached the highest point since records began.

The analysis, between 2006 to 2007, and 2016 to 2017, details trends in severe obesity for the first time, capturing the height and weight of more than one million children in Reception (aged four to five) and Year 6 (10 to 11) in school each year.

PHE says that the findings also show stark health inequalities continue to widen, with the prevalence of excess weight, obesity, overweight and severe obesity being higher in the most deprived areas compared to the least deprived, which is happening at a faster rate in Year 6 than Reception.

Other observations include an upward trend of excess weight, obesity and severe obesity in Year 6 children, a downward trend of excess weight, overweight, obesity and severe obesity

in Reception age boys and a downward trend of underweight in Reception age boys and girls, and Year 6 girls.

Dr Alison Tedstone, Chief Nutritionist at PHE, commented: "The rise in severe obesity and widening health inequalities highlight why bold measures are needed to tackle this threat to our children's health. These trends are extremely worrying and have been decades in the making – reversing them will not happen overnight."

PHE added that unhealthy weight in childhood can result in bullying, stigma and low self-esteem. It is also likely to continue into adulthood, increasing the risk of preventable illnesses, including type 2 diabetes, heart disease and some cancers. As part of its work to reduce childhood obesity, PHE is working with the food industry to cut 20 per cent of sugar from everyday products by 2020, and 20 per cent of calories by 2024.

The Department of Health and Social Care recently announced the second chapter of its *Childhood Obesity Plan* to help halve childhood obesity by 2030. Main actions include mandatory calorie labelling on menus, and restrictions on price promotions on foods high in fat, salt or sugar. The measures will go out for consultation later in 2018.

Commenting on the data, Bridget Benelam, Nutrition Communications Manager at the British Nutrition Foundation, described the findings as particularly worrying as obesity has a negative impact on children, both in the short and the long term.

"However, while addressing obesity and overweight in children, it's important to remember that they are growing and developing, so having a balanced diet is key, not only for a healthy weight, but to provide all the essential nutrients they need to be healthy," she commented.

"In addition to PHE's statistics on obesity in young children, our National Diet and Nutrition Survey shows that there are also a number of issues with low nutrient intake in 11-18-year olds, who have the worst micronutrient intakes of any age group in the population. This age group, particularly girls, have low intakes of calcium, folate (girls only), iodine, iron, potassium and zinc, which suggests that not only are young people overeating, but that the balance of foods they are eating does not reflect a healthy diet. Alongside this, levels of physical activity in children are low, with only about 20 per cent of five-15-year olds meeting current guidelines to be moderately active for at least an hour a day."

## New name for personalised nutrition brand



A personalised nutrition brand has undergone a rebrand.

Run by Nutritionist,

Wendy Richards, NAP4EU has changed its name to Gene Living and offers personalised diet plans using the SWAMI epigenetic profiling, as well as The Blood Type Diet.

Both endorsed by Dr D'Adamo, SWAMI builds a dynamic, one of a kind diet plan that is customised according to your specific body chemistry, whilst The Blood Type Diet looks at which foods have a positive or negative effect on the body based on blood types.

The company is designed to help people take control of all these things. It's the first step in developing a healthy relationship with food and eliminating any imbalances in your body that lead to weight gain and health problems.

Gene Living also gives practitioners the opportunity to run their own Gene Living personalised wellness groups. With full dedicated training, and support, you can provide the right diet specific to the biochemical script coded within your group member's blood and genes, creating a unique diet and personalised supplement plan for each individual.



## ADM completes deal to acquire Protexin

Protexin, which has the Bio-Kult and Lepicol brands in its portfolio, have been acquired by Archer Daniel Midlands (ADM) for £185m.

The deal was initially announced in June, and was then completed in August, with ADM announcing it had acquired Probiotics International, known under its umbrella brand Protexin to provide fully integrated probiotics and nutraceuticals for consumer and commercial markets.

The £185m deal is the latest in a series of investments as ADM continues to expand its wide portfolio of health and wellness offerings for both human and animal nutrition customers.

ADM Protexin Limited – as the company will now be known – produces innovative, research-based probiotics, as well as offering a variety of natural products and probiotic supplements for the veterinary, agriculture and equine healthcare

markets.

Vikram Luthar, President, ADM Health & Wellness, commented: "With its leading human and animal nutrition brands sold in markets around the world, Protexin is an ideal addition to ADM's established Health & Wellness business, which already includes a comprehensive range of ingredients, such as bioactives, botanical extracts and specialty nutritional oils.

"We are excited to combine Protexin's portfolio of high quality probiotic products, along with its international commercial network and marketing and regulatory expertise, with ADM's world-class research and development capabilities to help offer customers a full range of health and wellness products and solutions."

Last year, ADM acquired Biopolis, a leading provider of microbial technologies, and it has since announced a number of other research and development partnerships in the prebiotics and probiotics, personalised nutrition and animal health enzyme spaces.

"We are building our capabilities to help our customers address fast-growing demands across the food and beverage, infant nutrition, personal care, animal nutrition and pharmaceutical segments," Luthar added.

Jonathan Sowler, Protexin Commercial Director, added: "We are delighted to join ADM's Health & Wellness business. With numerous areas of expertise between Protexin, ADM and Biopolis, we will develop a wide range of fully integrated market-leading probiotics and nutraceuticals products promoting health and wellness in both humans and animals."



## Glucosamine under spotlight as MHRA expected to issue new guidance

The MHRA is expected to issue guidance over the levels of glucosamine containing products (GCPs) as food supplements.

Glucosamine has been in the spotlight after a court case which sought to have glucosamine declassified as a food supplement in favour of it being classified as a medicine. The case was unsuccessful and it was ruled that glucosamine would continue to be a food supplement.

However, the matter hasn't gone away and the MHRA has now confirmed it will be issuing guidance around what it considers appropriate levels as a food supplement.

An MHRA spokeswoman commented: "Following a Court of Appeal Judgment in 2016, the Medicines and Healthcare products Regulatory Agency (MHRA) have carried out a review of the classification of glucosamine containing products (GCPs), which included commissioning consumer research to understand how and why they are used. We are expecting to be able to communicate the results of this review very shortly."

The Health Food Manufacturers' Association (HFMA) has worked closely with the MHRA on the case, and its Executive Director, Graham Keen, commented: "As the responsible trade association representing the natural

products industry, we have been working closely in support of the Medicines and Healthcare Products Regulatory Agency (MHRA) in their recent court case regarding the status of Glucosamine Containing Products (GCPs), which has been ongoing for several years.

"Those seeking to have glucosamine classed as a medicine at any level were unsuccessful in this aim and glucosamine will still be available as a food supplement. However, new guidance expected from the MHRA will mean that anything at or above a level of 1,178mg glucosamine (base) or the equivalent figure of 1500mg glucosamine sulphate per daily intake, will be classed as medicinal.

"Following this advice, we will be working with members to develop effective products at a new food supplement upper level of 1400mg glucosamine sulphate per daily intake, which will now act as the strongest level of glucosamine available without prescription. As an industry that already operates in one of the most regulated environments in the world, we will continue to work with other associations to establish these new guidance levels for the industry, and to ensure that the new approach is fairly and consistently applied in a way that is responsible and clear to consumers."

# In Research

*Nutrition I-Mag* rounds up the latest research studies in the nutrition world.

## Study finds selenium and CoQ10 supplementation reduces cardiovascular disease risk

A follow-up study examining the long-term effect of selenium and CoQ10 supplementation on mortality from cardiovascular disease has found significant risk reduction.

Researchers, writing in the journal, *PLOS One*, explained that intake of selenium is low in Europe, and the endogenous production of coenzyme Q10 decreases as age increases. Therefore, they performed an intervention trial using selenium and coenzyme Q10 for four years.

The main publication reported reduced cardiovascular mortality as a result of the intervention, and so the present sub-study objective was to determine whether reduced cardiovascular (CV) mortality persisted after 12 years in the supplemented population or in subgroups with diabetes, hypertension, ischemic heart disease or reduced functional capacity due to impaired cardiac function.

A total of 443 healthy elderly individuals in Sweden were included in the study, given dietary supplementation of 200mg/day of coenzyme Q10 capsules (Bio-Quinon) and 200µg/day of organic selenium yeast tablets (SelenoPrecise), or a similar placebo during 48 months, and then the interventions were finished. Cardiovascular mortality was registered, and no participant was lost to the follow-up. Based on death certificates and autopsy results, mortality was registered.

It was found that after 12 years, significantly reduced CV mortality could be seen in those supplemented with selenium and coenzyme Q10, with a CV mortality of 28.1 per cent in the active treatment group, and 38.7 per cent in the placebo group. In those with ischemic heart disease, diabetes, hypertension and impaired functional capacity, a significantly reduced CV mortality risk was demonstrated.

In conclusion, the researchers commented: "This is a 12-year follow-up of a group of healthy elderly participants that were supplemented with selenium and coenzyme Q10 for four years. Even after 12 years, we observed a significantly reduced risk for CV mortality in this group, as well as in subgroups of patients with diabetes, hypertension, ischemic heart disease or impaired functional capacity. The results thus validate the results obtained in the 10-year evaluation.

"The protective action was not confined to the intervention period, but persisted during the follow-up period. The mechanisms behind this effect remain to be fully elucidated, although various effects on cardiac function, oxidative stress, fibrosis and inflammation have previously been identified. Since this was a small study, the observations should be regarded as hypothesis-generating."



## Researchers develop therapy to help dementia patients maintain lifestyle

The University of Exeter is leading a programme to train carers in goal-orientated cognitive rehabilitation.

It entails practitioners working with people with dementia and their carers to establish goals that are most important to helping people maintain their lifestyle. The practitioner works with the person and the carer to put in place strategies to help them achieve these goals.

The technique was developed following the GREAT trial, a large-scale randomised controlled trial, in which half of the participants received the therapy and half did not. It involved 475 people across eight sites in the UK. Half of the group received 10 cognitive rehabilitation sessions over three months, and then took part in four 'top-up' sessions over six months. The other half continued with their lives as usual, allowing the research team to measure any benefits from the therapy.

The study, funded by the National Institute for Health Research (NIHR) and supported by Alzheimer's Society, found that those who took part in the therapy showed significant improvement in the areas they

had identified, after both the 10 week and 'top-up' sessions. Family carers agreed that their performance had improved. Both participants and carers were happier with the participants' abilities in the areas identified.

Now, university researchers are implementing the technique by offering training to staff in NHS trusts and social care organisations providing care to people with dementia. Alzheimer's Society is funding a new study, called GREAT into Practice, to see if this approach can be incorporated into routine practice so that people with dementia can benefit.

Dr Krystal Warmoth, of the University of Exeter and Project Manager for GREAT into Practice, commented: "Our research has shown that cognitive rehabilitation can help people achieve the goals that matter most to them. This is essential in demonstrating that dementia is not an inevitable decline in all areas, and in providing people with the simple tools to live as well as possible with the condition. We're excited to roll this out so more people can benefit."



## Research finds obesity is linked to affluence

A new study from the University of Huddersfield has found that those on lower incomes are more likely to be obese.

Writing in the journal *Social Science and Medicine*, the researchers found that for less affluent people, food pleasure is affordable, accessible, immediate and reliable in a way that other pleasures are not, but, at the same time, overeating is accompanied by feelings of frustration, sadness and shame as they struggled to lose weight.

Now, Professor Paul Bissell, who headed the research project, alongside Dr Christine Smith, Dr Joanna Blackburn and Dr Marian Peacock, is calling for health professionals to lessen the stigma that has grown around obesity.

Professor Bissell and his colleagues carried out a series of in-depth interviews with 45 people in South Yorkshire, who were both obese and materially deprived and spoke frankly about the dilemmas they faced.

The project originated, said Professor Bissell – who is Dean of the University of Huddersfield's School of Human and Health Sciences – when he and his collaborators wanted to find reasons for the 'social gradient' that has seen a shift from the richest to the poorest being the most obese members of society.

The interviews led to deeper insights into some of the anxieties, sadnesses and



shaming experiences of participants, added Professor Bissell.

"Twenty or 30 years ago, we would be more forgiving about people who are obese. Now, there is a discourse that health is entirely your own responsibility and we also view obesity in that light," commented Professor Bissell. "If you ally that with social class, then it is people who are poor and obese who can be publically laughed at. Many of our participants experience extremely high levels of shame and humiliation because they are obese. And one of the things they do to manage their unhappiness is to eat more."

"So, they are stuck in a cycle, and it is tougher for poorer people to cope with the stigma of obesity and indeed cope with losing weight, because of their material circumstances and the fact that they have got less cultural capital."

## Omega 3 deficiency linked to poorer physical performance in older people

Researchers have discovered that low levels of omega 3 are linked to poorer physical performance among older adults.

The results of the study, published in the journal *Clinical Nutrition*, found that participants with a low omega 3 index had worse performance-based test results of physical function than people with a high index.

However, it was added that this association did not reach statistical significance once confounders were controlled for.

"Studies looking at the over-time associations between PUFA status and physical performance changes may shed more light on this topic," the researchers concluded.

The research highlighted that, so far, few studies have highlighted the associations between PUFA status and performance-based tests of physical

function and so they set out to study the associations between the omega 3 index (red blood cell (RBC) membrane content of omega 3 PUFAs, such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) and physical performance measured with the Short Physical Performance Battery (SPPB) in a sample of community-dwelling older adults.

A total of 1,449 participants with available data on PUFAs were included and Omega-3 index and SPPB scores measured at enrollment. It was found that participants who were in the lowest omega 3 index quartile (Q1) had a SPPB score significantly lower than participants in the three other quartiles (Q2–Q4). However, adjusted (for age, gender, cognitive function, depressive status, Body Mass Index and grip strength) multiple linear regression showed that the omega-3 index-SPPB score association did not reach statistical significance.



# New to market

*Nutrition I-Mag brings you the latest product developments in the nutrition world.*

## NATURE'S PLUS NEW ADDITION GIVES BACK



Nature's Plus has developed a new organic and vegan multivitamin, with 100 per cent of profits donated to global charities. Infinite Planet Daily Multi has been formulated to contain 100 per cent organic

food derived nutrients and organic wholefood blend. It has been designed to provide antioxidants and botanicals, including baobab, maca and Kakadu plum.

The multi contains 20 wholefood-grown vitamins and minerals and 40 organic wholefoods and extracts.

Nature's Plus has announced that 100 per cent of the profits from the sales of the supplement are donated to charities, including Vitamin Angels and the Animal Welfare Institute.

## CLEAN AND ECO-FRIENDLY

Woobamboo has announced the launch of a range of eco-friendly and vegan toothpastes.

Designed for both adults and children, Woobamboo is already known for its bamboo toothbrushes but has now extended its range to include toothpastes made with plant-based plastic and a bamboo cap, both 100 per cent recyclable.

The range comes in four flavours, Vanilla Mint (adults only), Sweet Cinnamon (adults only), Bubble Berry (adults and children), and Marshmallow (adults and children). All the toothpastes are fluoride free and naturally help to brighten teeth, remove plaque, prevent tartar build-up and keep mouths moist, healthy and happy.

The range is distributed by Mahi Naturals in the UK.



## G&G EVOLVES PORTFOLIO WITH VITAMIN K2

Vitamin K2 is the latest product to be added to the range at G&G Vitamins.

Vitamin K2 (MK-7) contributes to the maintenance of normal bones, while vitamin K contributes to normal blood clotting.

Each capsule provides 200µg of vitamin K2 (MK-7), and is designed to provide high quality and high strength vitamin K within a vegetable cellulose capsule.



## FOCUS ON PERFORMANCE

Ingredient supplier, HTC, has unveiled a new range of finished products with a focus on sports nutrition.

Clean Performance Nutrition has been designed to offer a completely new concept to women looking for products that will support their healthy lifestyles and help them get the best out of their fitness efforts. The brand's ethos is built around the view that 'less is more', with each product using the lowest amount of ingredients and all of the highest quality.

Included in the Sports Nutrition range is Whey Protein Powder, available in strawberry or vanilla flavour. It contains B vitamins and folic acid, designed to boost protein intake and help with mood and energy levels. There is also Collagen Powder, which contains hydrolysed marine collagen, while those following a plant-based diet can opt for Clean Performance Nutrition's Chocolate Vegan Protein, a unique blend of pea protein, brown rice protein and hemp protein. In addition to being vegan, it is also soy free and contains non-GMO ingredients.

Other products in the Vegan range includes Supergreens Powder, Body Work, to support healthy metabolism, and Pre Workout, with beta-alanine and glutamine, to deliver important benefits.

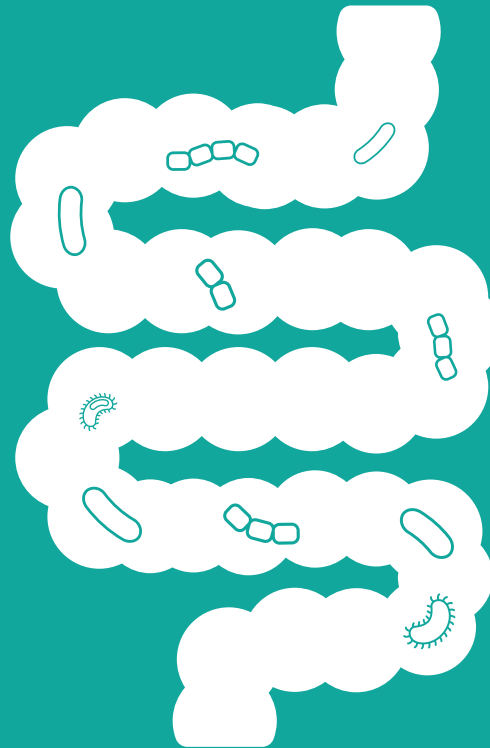






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# BANT News

The latest developments from the leading professional body for Registered Nutritional Therapists, BANT.



## BANT LAUNCHES PETITION FOR SUGAR TAX LOOPHOLE TO BE CLOSED

Caloric maltodextrin is being exploited by food manufacturers.

BANT's petition is pleading for the Government to ensure a level playing field and not to leave loopholes for food manufacturers to exploit. If there is a 'sugar tax', then it should include all sugars and sweeteners that evidence has shown have the same deleterious metabolic effect on the body.

The food industry is taking advantage of a flawed definition of carbohydrates to mislead the public and use caloric maltodextrin as a free sugar. Caloric maltodextrin is not a mono or di-saccharide so is not normally classed as a 'sugar', but caloric maltodextrin acts in exactly the same way as sugar and has a high glycaemic index. The simple fact is, if it acts like a sugar metabolically, it should be counted as a sugar, regardless of the chemical classification. Even the US Food and Drug Administration lists caloric maltodextrin as a free sugar and regards it as empty calories.

BANT doesn't want to stop anyone having the foods or drinks they want,

but the organisation and its members do want to ensure that each person has the information necessary to make an informed choice, particularly if they suffer from a condition for which blood sugar levels need to be stable.

Help BANT by signing this petition at <https://petition.parliament.uk/petitions/225684> to get caloric maltodextrin included within the sugar tax legislation to protect the nation's health.

The 'sugar tax' primarily focuses on drinks containing added sugar and when it was announced, BANT supported the premise of the taxation based on scientific evidence available that sugar and the over-consumption of sugary drinks is a major contributing factor to obesity and its related conditions. However, already at the time, BANT highlighted that sugar drinks are only part of the problem. Processed foods and drinks containing hidden sugars and molecules that aren't sugars, but that act on the body exactly as a sugar would contribute to the trajectory of obesity.

Please sign and share widely; it takes a few seconds.

## BANT LONDON AND SOUTH EAST REGIONAL MEETING: CARDIOMETABOLIC HEALTH

The BANT London and SE Regional Branch Meeting was fully attended and held in the award-winning Café Spice Namaste, in London.

Cardiometabolic Health doesn't feature regularly on the conference circuit, despite the fact that heart disease remains the biggest cause of death in the UK for men aged 50-80 and the second biggest cause of death in the UK overall (after Alzheimer's and dementia). Yet, it is an area in which as a profession, Nutritional Therapists can make a huge impact, and this was the initial thought behind putting together this meeting for practitioners.

The first speaker for the day, D Deanna Minich, published a paper two months ago in *JACN*<sup>1</sup> and the abstract really highlighted the educational objectives for the day by stating: "It is well known that about 80 per cent of CHD can be prevented with optimal nutrition, coupled with exercise, weight management, mild alcohol intake, and smoking cessation. Among all of these factors, optimal nutrition provides the basic foundation for prevention and treatment of CHD."

Dr Minich gave an inspirational presentation on Nutrition and Cardiovascular Disease – Dietary Patterns, Food and Nutrients, speaking on a range of factors influencing cardiovascular disease, from the role of colourful, anti-inflammatory diets to heart rate variability.

After a break for refreshments and a book signing by Dr Minich, the pre-lunch speaker, Pol de Saedeleer, R.Pharm, took centre stage. Pol approached cardiometabolic health from a different angle, covering some of the triggers underlying cardiometabolic symptoms, including excessive exercise, stress and changes in the microbiome.

The final speaker of the day was Ben Brown ND, who summarised the day perfectly with an engaging presentation on metabolic syndrome – from systems thinking to personalised care.

Recordings will be made available for BANT members as soon as possible via the BANT website. BANT regional meetings, despite the location, are available to all BANT members, with details available on BANT website.

<sup>1</sup> J Am Coll Nutr. 2018 Mar-Apr;37(3):169-187. doi: 10.1080/07315724.2017.1381053. Epub 2018 Jan 9.







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# Gut health and immunity to finish the year

We reveal what's in store for delegates to the remaining IHCAN Conferences of 2018.

**T**his month, we are thrilled to welcome naturopathic physician, Dr Michael Murray, ND, to the Cavendish Conference Centre, in London, to give a practical and dynamic presentation on Clinical Applications of Digestive Enzymes.

Dr Murray is an internationally sought-after speaker and one of the world's leading authorities on natural medicine. As keynote speaker, his talk will share valuable insights on the healing power of enzymes and other digestive aids.

He is a lead educator in modern enzyme therapy and explains: "Modern enzyme therapy utilises microbial and plant sources of enzymes to improve digestion and provide relief for common GI symptoms, including occasional gas, bloating, indigestion and irregularity.

"Poor digestion leads to an altered microbiome, biofilm formation, and sets the stage for inflammation and disruption of the brain-gut axis. Disruptions in the microbiome due to faulty digestion is being implicated in a wide range of health conditions."

Joining Dr Murray will be international GI expert, Dr Ashton Harper, who will speak on the theme, 'The microbiome-gut-brain axis: implications for health and disease', with an emphasis on both irritable bowel syndrome and migraine headaches.

This is a sold-out event, however, some places might become available due to late cancellations. To add yourself to the waiting list, please visit [www.ihcanconferences.co.uk/guthealth-september-8-2018-waiting-list](http://www.ihcanconferences.co.uk/guthealth-september-8-2018-waiting-list)

And remember, you can order the recordings.



## STILL TO COME...

Taking place on Saturday, November 17 will be the final IHCAN Conference of 2018, focusing on the immune system.

We're featuring as a main presenter, biologist, mycologist and mycotherapist, Catalina Fernández Ana de Portela, who began investigating the beneficial properties of mushrooms in the late '90s, while a biologist at the Universidade de Santiago de Compostela.

Founder of Hifas da Terra, she has built a life and business around the beneficial properties of medicinal mushrooms, studying their composition and creating innovative products.

It is her ambition to create awareness of the healing properties of mushrooms for our wellbeing. Her continuous investigations further confirmed these living organisms to be powerful adaptogens, capable of regulating the immune system and

protecting the body from a large variety of diseases and health issues.

With four and a half hours of CPD-accredited, cutting-edge research in nutrition and functional medicine, a healthy gluten free lunch, refreshments through the day, plenty of time to network with exhibitors and peers, and a free goody bag, you don't want to miss the last IHCAN Conference of 2018.

Places at this conference are very close to selling out, so we recommend securing yours now to avoid disappointment. Standard tickets are priced at £95, with significant discounts available for previous attendees, students and members of associations.

Book now by visiting [www.ihcanconferences.co.uk](http://www.ihcanconferences.co.uk) or call the team on 01279 810080.



# ADVANCING IMMUNITY



A weakened immune system is a common side effect of today's lifestyles, and the consequences to health are vast. Nutritional experts offer their insights into ensuring immune systems are functioning.

**T**he general public would commonly relate their immune system to the risk of catching a cold, feeling run down and taking longer than they should to get over a bug. But as Nutritional Therapists, you will know that immune health plays a far greater role in many important health functions. For example, digestive ill health can be impacted when the immune system is under par, while allergies and skin conditions are also hugely connected to our immunity.

Joe Welstead, co-founder of Motion Nutrition, agreed, commenting: "My only advice to Nutritional Therapists is to remember that people often see things as compartmentalised, like your immune system is separate from your overall health."



Of course, this is not the case. By looking after your overall health throughout the year, you'll have much less worrying to do when it comes to 'flu season as your body will be stronger and better equipped."

Jenny Logan, Technical Training Manager at Natures Aid, added: "To be frank, the immune system needs to be strong and working well all year round. It is not just there to keep colds and 'flu at bay. Imbalances in the immune response lead to the development of autoimmune conditions and allergic reactions. Issues within the immune system will also lead to increased inflammation. Supporting immune health is, therefore, a cornerstone of supporting the health of the body, preventing degenerative diseases, controlling allergies and fighting infections."

Rose Holmes, Nutritionist, BSc, Dip.ION, PGCE, MBANT, Education and Training Manager at Rio Health, continued: "Immune health associates with whole body health. When a particular part of the body is under stress (from an infection), other aspects of health may also be impacted; a respiratory infection can impact the brain's ability to function optimally and skin, as an important detox organ, may be impacted by the increased toxin produced during infection."

"The immune system includes the spleen, tonsils, bone marrow and lymph nodes. These provide the defending components of the body. Lymph contains tissue fluid, immune system cells and waste products. The lymph nodes help to trap bacteria, viruses and other invaders, including cancer cells. With reduced capacity to defend the body, all body systems are potentially at risk of less than optimal functioning."

## COLD WEATHER CULPRIT

People tend to be more susceptible to falling ill during the autumn and winter months simply because there are more

bugs around to catch – but why?

"There are a number of reasons why cold and 'flu season typically starts in the autumn. Firstly, viruses do not replicate well in high UV, so summer weather tends to keep them under control. Also, the rhinovirus and coronavirus, which are the two main agents of the common cold, flourish in cool weather.<sup>(1)</sup> Additionally, September is the time when children go back to school, and are placed at close quarters, creating the perfect environment for the spread of any infections," Logan explained.

## "Supporting immune health is a cornerstone of supporting the health of the body, preventing degenerative diseases, controlling allergies and fighting infections."

Hannah Braye, Nutritional Therapist and Technical Advisor at Protexin, which has the Bio-Kult and Lepicol brands in its portfolio, added: "Many people believe acute viral respiratory infections to be the result of a 'chill' and the onset of a respiratory infection is often associated with acute cooling of the body surface, especially as the result of cold weather combined with wet clothes and hair. However, experiments involving inoculation of common cold viruses into the nose and periods of cold exposure have failed to demonstrate any effect of cold exposure on susceptibility to infection with common cold viruses.<sup>5</sup> Although some hypothesise that cold weather may cause reflex vasoconstriction in the nose and upper airways, which may inhibit respiratory defences and cause the onset of symptoms.<sup>5</sup>

"Other common theories include rhinoviruses (which account for more than three quarters of viruses circulating in early autumn),<sup>6</sup> perhaps being best suited to the cooler

weather, low levels of vitamin D seen in the population during the winter months, dryer indoor climate and more time spent indoors in proximity to others, allowing for easier disease transmission."

However, Benjamin Brown ND is a naturopath, science writer and speaker and added: "The name, influenza, is understood to be derived from the original Italian name, *influenza di freddo*, meaning 'influence of the cold'. But it is a common misconception that cold weather is to blame, in fact, there are two main reasons why people might experience more colds and 'flu in winter. One, during winter, people spend more time indoors and subsequently closer contact so viruses can be transmitted more easily. Two, lack of sunlight in winter increased the prevalence of vitamin D deficiency, which can lower resistance to infections."

Other factors may play a role in making your immune system under par.

Egzona Makolli, Technical and Commercial Nutritionist at Kinetic, explained: "Immune responses can be depleted for many reasons as stress lifestyle factors, poor dietary intake and inadequate nutritional intake can have a great impact on the immune system. There are many conditions which can result in a low immune system, such as cancer, HIV infection, and inflammatory bowel disease, transplant surgery and advanced ageing. Ageing can also be a huge factor as children are generally more susceptible to a viral infection as they have not yet developed immunity to many of the viruses that cause colds or 'flus. Also, because their immune systems are immature and have not fully developed.

"It's essential to book a GP appointment to fully investigate any low immune system symptoms as there are serious health risks of a weak immune system, which include HIV, viral hepatitis, cancers of the immune system (leukaemia) and cancer of the plasma cells (myeloma)."

## SUSCEPTIBLE TO ILLNESS

People are more likely to fall ill, in various ways, if their immune system is not functioning optimally, and they will present with some common signs.

Braye advised: "The most obvious sign that the immune system might be struggling is recurrent infections,<sup>1</sup> for example, colds (more than two a year), chest infections, tonsillitis, ear infections, urinary tract infections, stomach bugs, thrush, and athlete's foot. Allergies and atopic conditions, such as eczema, asthma, hay fever and hives, are also said to involve a malfunction of the immune system,<sup>2</sup> in which usually harmless substances (such as pollen, dust mites, chemicals, pet dander or foods) are misinterpreted by the immune system as being harmful, causing a heightened reaction towards them.

"Auto-immunity is another clear sign that the immune system is dis-regulated (and most likely has been for some time), as immune self-tolerance has been lost to such an extent that the immune system starts to attack the body's own cells, incorrectly identifying them as foreign invaders."<sup>1-3</sup>

Makolli added: "Many individuals who have a low immune system will catch colds more easily and have at least two colds/flu a year. Many may also suffer from chronic infections and have swollen or sore lymph glands. Constant fatigue, tiredness and lethargy can indicate a low immune system, as can insomnia."

Holmes continued: "Particularly at-risk groups include the very old, the very young, those already ill, pregnant women and those suffering poverty or poor housing conditions. Immunity can be reduced by steroids and medications that suppress the immune system, as well as by some types of cancer and other disorders. Implanted medical devices may also predispose individuals to immune disorders."

Romina Melwani, Mycotherapist at Hifas da Terra, added of the signs: "Recurrent colds and infections, frequent skin outbreaks, rashes, hives, cold sores, allergies, weight loss or weight gain, hair loss or dull hair, weak nails, slow healing wounds, digestive problems, anaemia, joint pain, headaches and migraines, fatigue and mouth ulcers."

## LINKED ISSUES

The immune system is complex and is linked to so many other functions in the body. Therefore, it makes sense that if it is under par, it simply cannot do its job – and the result can be far more than a cold.

"In addition to recurrent infections, allergic conditions and auto-immunity, a further serious consequence of immune dysregulation is an increased risk of developing cancers.<sup>1</sup> We require the innate immune system to remain constantly vigilant, not only against foreign pathogens but also to spot mutated cells that are constantly being produced by the body and if left unchecked can become cancerous," Braye advised.

"These cells must then be destroyed appropriately by the acquired immune system and immunological memory developed.<sup>4</sup> When the immune system is compromised, this vital function of immuno-editing becomes less efficient."

Holmes added: "Immune system disorders may also occur, including allergic reactions (asthma, eczema and allergic rhinitis), which may occur when the immune system is over-active, and autoimmune disease (including type I diabetes, rheumatoid arthritis and lupus) when the immune system turns against itself."

Joanna Scott-Lutyens BA(Hons) DiplON FdSc mBANT CNHC is a Nutritional Therapist at OptiBac Probiotics, added that signs can be missed when they relate to the immune system.

"Other less obviously connected symptoms such as constant fatigue, aching joints, allergies, digestive symptoms and even weight gain can be warning signs that a person's immune system is suffering, which are often missed. A rise in all

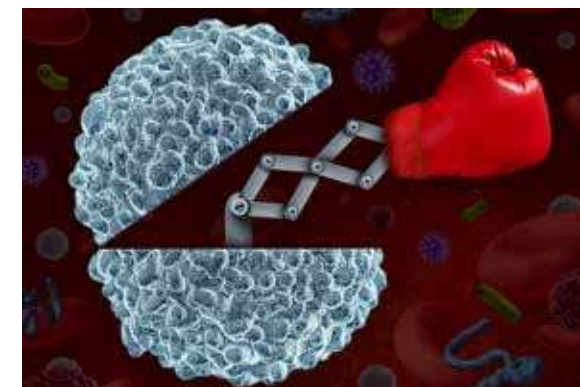
of these complaints strongly suggest a growing underlying issue with our immunity. And with 70 per cent of our immune system residing in our gut this is an interesting correlation with the emerging research that as a society, our gut microbiome is under stress," she explained.

"An immune system that is out of balance for a long time can seriously undermine our health. An under functioning immune system that is allowed to become chronic can lead to allergies, autoimmune diseases and even chronic fatigue or ME<sup>(4)</sup>. It is much harder to reverse or manage these conditions, which are then systemic. It's therefore vital we support and rebuild the immune system early on in the process."

## DIETARY PLAN

To support a healthy immune system, there are some obvious changes to make to a person's nutritional plan.

"Nutrition and the immune system interact at multiple levels and, for simplicity, can be considered in a framework of two stages: Stage one, complete nutrition (optimising intake of



overall nutritional intake as all nutrients are vital for healthy immune system function, especially dietary energy, protein, omega 3 fatty acids, phytonutrients, vitamins such as A, C, and E, and minerals such as selenium, zinc, magnesium, and iron); stage two, active modulation of the immune system (here the emphasis is on active interaction with the immune system to modulate its function toward a desired goal, such as increased resistance to infections)," Brown explained.

So, what needs to be added in?

"Nutrition is a critical determinant of immune responses and malnutrition is the most common cause of immunodeficiency worldwide.<sup>8</sup> Low protein intake, in particular, is associated with a significant impairment of many immune cells and functions<sup>8</sup>," Braye explained. "So, ensuring adequate intake from good quality sources such as organic grass-fed meat, wild fish, eggs, beans, legumes, nuts and seeds is therefore important. Deficiency of single nutrients also results in altered immune responses and this is observed even when the deficiency state is relatively mild.<sup>8</sup> Of the micronutrients, zinc, selenium, iron, copper, vitamins A, C, E, and B6, and folate have important influences on immune responses.<sup>8</sup> Testing micronutrient status with clients and working with them to implement a balanced whole foods diet high in colourful fruit and veg, good quality protein and healthy fats is therefore advisable."

She continued: "There are also certain foods known to have a beneficial effect on immunity, for example, traditionally fermented foods such as sauerkraut, kimchi, kefir, kombucha, miso and live yoghurt may help address dysbiosis in the gut,<sup>9</sup> where over 70 per cent of immune cells reside.<sup>10</sup> Studies also show that garlic (*Allium sativum*) appears to enhance the functioning of the immune system by stimulating certain cell types, such as macrophages, lymphocytes, natural killer (NK) cells, dendritic cells,

and eosinophils.<sup>11</sup> Green tea (*Camellia sinensis*), ginger (*Zingiber officinale*) and black cumin (*Nigella sativa*) also appear to have immuno-modulatory potential via various modes of action."<sup>12</sup>

Also advise on what to remove from the diet.

Logan advised: "Studies have indicated that simple carbohydrates – specifically glucose, fructose, sucrose, honey and orange juice – can all significantly reduce phagocytosis. This decrease was most notable between one to two hours after ingestion but was still apparent even up to five hours after feeding. This highlights the issue with the amount of processed and simple carbohydrates in the modern diet, and it is the key issue to address when looking to make dietary changes."<sup>(3)</sup>

"Choosing to use artificial sweeteners in a bid to limit sugar is also detrimental to the health of the immune system. There is some research which indicates that artificial sweeteners may directly affect the immune system by reducing the number of anti-inflammatory cytokines produced. However, the strongest evidence against these chemicals indicate the negative impact that artificial sweeteners have on the microbiome. Scientists have shown that sweeteners, including acesulfame, aspartame and saccharine, will affect the numbers and types of bacteria in the microbiome and can lead to a reduction in beneficial bacteria."<sup>(4-6)</sup>

And Welstead recommended: "Tryptophan-rich foods like organic whey protein, oats and sesame seeds will promote deep sleep, so you could try a simple smoothie before bed. Add in a little natural yoghurt and you're also feeding your gut flora."

## NUTRITIONAL SUPPORT

Logan highlighted beta glucans as being a useful way to reduce the number and severity of infections.

She commented: "A study was carried out on marathon

runners, giving them either beta glucan or placebo over four weeks post marathon. The number of URIs in the beta glucan group was eight per cent, whilst that in the placebo group was 24 per cent.<sup>(8)</sup> A further study involved 162 patients of all ages (18-70) who had suffered cold infections at least three times in the previous six months. As well as 25 per cent fewer infections in the beta glucan group, the severity of infections was reduced.<sup>(9)</sup>

"Another report followed 100 subjects receiving either beta glucans or a placebo over 26 weeks. There were significantly more subjects with common cold symptoms in the placebo group and it was noted that beta glucans significantly reduced the severity of the typical cold symptoms.<sup>(10)</sup> "In order to be effective, beta glucans need to be sourced from yeast or fungi and to consist of a (1,3)-beta-linked backbone with small numbers of (1,6)-beta-linked side chains."<sup>(26)</sup>

Zinc and vitamin C is important.

"Suboptimal intakes of C and zinc are perhaps the most important dietary factors that increase risk for infection, namely because they have both been shown to significantly reduce the incidence and duration of colds and 'flu in human clinical studies. Doses of 1000-2000mg of vitamin C per day when you get a cold have been shown to shorten your time to recovery, and 500 mg per day works well as a preventative<sup>(1,2)</sup>. And taking zinc within 24 hours of the start of symptoms was found to cut the risk of still having symptoms at day seven of a cold by about half," Brown explained. "And for prevention, taking zinc for at least five months cut cold risk by a third<sup>(3)</sup>."

He continued: "I am a big fan of n-acetylcysteine (NAC), about 600mg as a preventative dose then increasing to three times daily at the first sign of an infection. A couple of clinical studies demonstrated excellent reduction in both incidence and duration of infection and the mechanism of action is cool; it boosts glutathione, which



both balances and primes your immune system, and it is a mucolytic (breaks down mucus), so it can clear up those nasty wet infections that sit on the chest for ages.”

Holmes continued: “Amino acids are needed for the polypeptide chains of immunoglobulins, and amino acids aid in immune response by regulating activation of T-lymphocytes, B-lymphocytes, natural killer cells and macrophages, cellular redox state, gene expression and lymphocyte proliferation, and the production of antibodies, cytokines and other cytotoxic substances<sup>iii</sup>. Excess amino acids can also be detrimental; arginine, glutamine and cysteine are the best prototypes<sup>iv</sup> and levels of these should particularly be maintained.

“Arginine, through its involvement in nitric oxide synthesis, is important for host defense and immunological reactions<sup>v</sup>. Glutamine has been shown to enhance the function of immune cells and some research suggest that it may restore natural killer cell function in healthy cells by restoring glutathione levels<sup>vi</sup>. The body’s ability to synthesise glutathione depends on the availability of cysteine, the rate-limiting amino acid; cysteine supply is limiting for important lymphocyte functions and strongly influences both glutathione levels and the activity of transcription factor NFκB<sup>vii</sup>. Cysteine may also aid breakdown of mucus<sup>viii</sup>.”

Jenny Bodenham BA(Hons), Dip.ION, Nutritional Therapist at Higher Nature, highlighted antimicrobials.

“The antiviral activities of blackcurrant (*Ribes nigrum*) against influenza A and B, may act by inhibition of the release of the virus from infected cells<sup>4</sup>. And black elderberry – antiviral action and has been found in trials to be active against several strains of influenza.<sup>5</sup> The purple pigment of the black elderberry contains a concentrated source of anthocyanins, five times greater than the blueberry.”

Brown added: “Elderberry extract has been shown to

significantly improve ‘flu symptoms and speed up time to recovery compared to placebo in two studies at a typical dose of 15 ml daily<sup>1,2</sup>. A garlic extract containing allicin (a key active phytonutrient garlic) when taken over the winter months reduced number of colds (24 vs 65 for placebo) and sped up recovery time (1.52 vs 5.01 days for placebo) in a clinical study of over 350 people<sup>3</sup> Drinking green tea could help prevent flu<sup>4</sup>. And about a tablespoon of honey taken at bedtime relieves night time coughs<sup>5</sup>.”

Don’t forget the beneficial effect of mushroom nutrition.

Melwani advised: “Lion’s mane is known for its support and regeneration of the gastro-intestinal epithelial lining and nerve tissue repair can have a great impact on improving immunity via repair of the enteric nervous system and gut healing. Reishi’s many properties support so many systems functions, including the immune system’s ability to resist viruses through the rich number of β-glucans, polysaccharides with regulatory effects on immunity. It is also rich in B-vitamins, vital to immunity, digestion, detoxification, skin and hair health. Cordyceps contains ergosterol, a precursor of vitamin D, which is vital in healthy immune function. It also supports energy production, respiratory capacity and is great at combating fatigue common in low immune individuals.”

## GUT FRIENDLY

No guide to immune health would be complete without turning the spotlight on the gut as the two are so heavily interlinked.

Scott-Lutyens described the microbiome as the immune interface, commenting that it is a vital starting point for building up the immune system for winter<sup>2</sup>.

“The microbiome works in several ways to protect our immunity. Firstly, it provides a primary barrier against pathogens. Secondly, it has gut wall fortifying actions, protecting against the effects of leaky gut on our immune

system. And finally, our microbiota has an immune modulatory effect on the cellular components of our immune system. Yes, the bacteria actually ‘talk’ to the immune system,” she explained.

Braye added: “The microbial community in the gut is a complex and dynamic system crucial for the development and maturation of both systemic and mucosal immune responses. The complex interaction between available nutrients, the microbiota, and the immune system are central regulators in maintaining homeostasis and fighting against invading pathogens at mucosal sites.<sup>7</sup> Recent reports indicate that the gut microbiota and modifications thereof, due to a consumption of a typical Western diet (low in nutrients and fibre and high in processed foods), can trigger factors regulating the development and/or progression of immune related diseases.<sup>7</sup>

“Probiotics have been shown to directly and indirectly affect both the innate and acquired immune systems.<sup>15</sup> As different bacterial strains have individual beneficial effects and work in different areas of the gut, multi-strain probiotic products are believed to have more positive benefits overall, supporting the immune system in a variety of ways. Certain strains such as *Bacillus subtilis* PXN 21 has been shown to be particularly effective at stimulating the innate immune system.<sup>16</sup>

Logan added: “Supporting the microbiome is important, especially if the client has been on antibiotics, which many people with recurrent infections will have been. Recent research has indicated that the negative effects of antibiotics on our gut flora could last for up to a year. A study carried out in the UK and Sweden checked people’s oral and gut biomes directly after a one-week course of antibiotics. They then checked the same people at one, two, four, and 12 months post treatment. Generally, whilst the oral microbiome recovered quite quickly, some of the bacteria in the gut suffered a crushing blow. This indicates

the importance of using a good bacteria supplement during and after antibiotics.<sup>(11)</sup> Strains which could be particularly important will include:

■ *Lactobacillus acidophilus* and *Lactobacillus casei* – both these strains increase lactic acid production and encourage the growth of other beneficial bacteria.<sup>(12)</sup>

■ *Bifidobacterium bifidus* – although found mostly in the gastrointestinal tract, this bacterium is also found in the mouth, vagina and in breast milk. It plays a role in building up the immune system, lowering cholesterol levels, and reducing the chance of allergies and intolerance.<sup>(13)</sup>

■ *Lactobacillus reuteri* – a bacteria which needs to be taken in a supplement, *L. reuteri* has been shown to help support and strengthen the immune response.<sup>(14)</sup>

Scott-Lutyens added: "Choosing probiotic products which name the full strain name is important as you can then check the clinical research behind those particular strains in the product. As we now know, no two bacteria act the same in the gut, although most probiotics will have a gut enhancing, and, therefore, immunity protecting effect. Some strains in particular include *Lactobacillus paracasei* CASEI 431, *Bifidobacterium lactis* BI-04, *Bifidobacterium lactis* BI-07. This can be seen in various ways, such as a reduction in duration of illness or an increase in IgG responses, or reducing the incidence of illnesses<sup>(3-7)</sup>.

## VITAMIN D DEMANDS

The 'sunshine' vitamin is critical to immune health, and when we need it the most, during the winter months, is the most common time we are lacking.

"As we cannot synthesise vitamin D from the sun's rays from October to April in the UK, making sure stores are adequately topped up during the summer and autumn is important. It may also be wise to have levels tested heading into winter to check whether additional supplementation is required," Braye commented.

Makolli added: "Studies have shown that taking a vitamin D3 supplement can aid in boosting the immune system and fighting of those winter blues. Research has shown that vitamin D3 supplements pay a key role in boosting the immune system, and the Commission Regulation (EU) 2012 has authorised that vitamin D contributes to the normal functioning of the immune system."

Bodenham added: "The role of vitamin D in immunity is the subject of growing research. Studies have as confirmed important interactions between vitamin D and cells from the innate as well as from the adaptive immune system. Research suggests that vitamin D supplementation in children reduces the risk of respiratory infections. Low serum levels of 25-hydroxyvitamin D

have been associated with an increased risk of upper respiratory tract infections in children<sup>(3)</sup>."

## ADDITIONAL RECOMMENDATIONS

There are some other recommendations you can make to clients that go hand in hand with a focus on nutrient levels.

"Long-term stress is very detrimental for the immune system as it creates inflammation that harms tissues as well as suppressing immune cells needed to fight infection," Scott-Lutyens explained.

"Stress impacts our immune system directly by corticosteroids dampening down the natural immune response. It also has a direct and damaging effect on our gut health, meaning we are not digesting or absorbing the nutrients we need. Additions to a protocol would be to increase exercise, sleep and ways to reduce stress, such as mindfulness. Again, the correlation between what is beneficial for immunity in general and what we would consider in a gut protocol is interesting. It's yet another reminder of how interlinked and integrated the various systems in our bodies are."

Holmes added: "Lifestyle recommendations might include ensuring a daily walk outdoors, increased ventilation in the home, ensuring hand hygiene, ensuring/addressing oral hygiene, assessing exposure to household/cosmetic toxins, and, very importantly, ensuring adequate and quality sleep – minimum seven hours per night."

Welstead added: "Being ill often causes disturbances to sleep quality, which can have a snowball effect on your overall health and your mental and physical wellbeing. On the other hand, good sleep can help improve immunity, so to me, sleep is an absolute priority. A regular bed time and evening routine can have a big positive impact." ●

## HERBAL SUPPORT

Certain herbs are also beneficial, with Holmes suggesting camu-camu for its exceedingly high vitamin C levels (1.6 times more than in acerola), as well as being rich in anthocyanidins, catechins, ellagic acid and rutin, and cat's claw (*Uncaria tomentosa*), also known as 'Uña de gato', which has been shown in studies to increase white blood cells, showing effect on all fractions of white blood cells and may have important functional impact on lymphocyte homeostasis<sup>ix</sup>.

She added: "Pau d'Arco (*Tabebuia impetiginosa*), also known as 'Lapacho', another immune supporting botanical from the Amazon rainforest, has broad-spectrum anti-viral, anti-bacterial and anti-fungal effects and has been traditionally used for colds, 'flu and other upper-respiratory tract infections'. *Usnea barbata* acts as a broad-spectrum herbal antibiotic and has been used traditionally for common colds<sup>xi</sup>."



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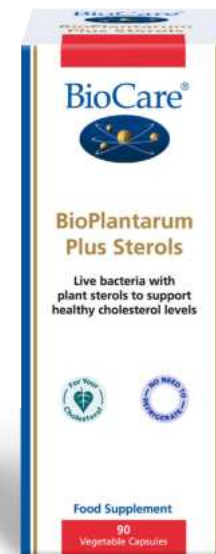
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# FOOD INTOLERANCE – THE NEXT STEPS

Food intolerance is on the rise, and the reasons are mixed. But what happens after a person has reached a diagnosis? And what associated health issues are there?





**A**llergy is now considered the most common chronic disease in Europe, according to Allergy UK, with more than 150m Europeans suffering from chronic allergic diseases. The current prediction is that by 2025, half of the entire EU population will be affected. The UK has some of the highest prevalence rates of allergic conditions in the world, with over 20 per cent of the population affected by one or more allergic disorder.

When you drill down further, it is estimated that between one to 10 per cent of adults and children have a food hypersensitivity, however, as many as 20 per cent of the population experience some reactions to foods which make them believe they do have a food hypersensitivity.

"Food allergies and intolerances appear to be increasingly common, to the point where supermarkets are now providing free from ranges and many restaurants and cafés offer gluten free and milk free options," commented Jenny Bodenham BA(Hons), Dip.ION, Nutritional Therapist at Higher Nature.

One of the most important factors surrounding this topic is the importance of understanding the difference between a food allergy and intolerance, as both are diagnosed differently, while management of it will also vary.

## THE SCIENCE OF INTOLERANCE

As already mentioned, it is necessary to differentiate between intolerance and allergy as the latter can be far more serious, and is generally lifelong.

Bodenham explained: "Unlike a classic food allergy in which IgE antibodies are triggered, causing an acute and immediate allergic reaction, food intolerances cause symptoms that may be delayed for hours or even days after eating the food, making it very difficult to pinpoint the culprit.

"A classic food intolerance is a non-immune mediated reaction, which may be caused by lack of the appropriate enzyme, such as lactose intolerance or histamine intolerance. Food additives, such as sodium benzoate, sulphites and monosodium glutamate, may also cause a variety of non-immune mediated symptoms, ranging from asthma, hives and dizziness to sweating and even vomiting and diarrhoea."

Nutrition expert, Patrick Holford, added: "Food intolerance, also known as non-IgE mediated food hypersensitivity or non-allergic food hypersensitivity, refers to difficulty in digesting certain foods. Foods most commonly associated with food intolerance include dairy products, grains that contain gluten, and foods that cause intestinal gas build-up, such as beans and cabbage, as well as lactose, caffeine, and histamine, which is present in mushrooms, pickles, and cured food, plus additives, such as artificial sweeteners, colourings and flavourings."

When you then compare it to a food allergy, the difference is clear; food allergies occur when your immune system reacts to a harmless food protein, due to the creation of IgE antibodies. When the protein is consumed, the antibodies recognise the protein and link to it, causing the release of substances, such as histamine, which will result in allergic symptoms. An immediate reaction (within two hours of eating the food), usually involves IgE antibodies, and the development of classic symptoms, such as an itchy rash, swelling and in some cases, vomiting and diarrhoea.



Bodenham continued: "Almost any food can cause a reaction but foods eaten most regularly are often the chief culprits – typically, wheat and dairy products, closely followed by other gluten grains, eggs and yeast."

And what are the causes?

"A digestive disturbance is often the underlying cause of food intolerance. Stress, eating on the run, excessive alcohol, poor diet, infections and some medications can all lower gut defences. This may lead to inflammation and increased permeability of the gut lining, allowing partially digested food particles to enter the bloodstream, promoting chronic inflammation," Bodenham advised, adding: "It is also believed that food intolerances may trigger the production of IgG antibodies in response to specific foods, causing an immune-mediated reaction."

Holford continued:

- **"Absence of an enzyme:** Enzymes are needed to digest foods fully. If some of these enzymes are missing, or insufficient, proper digestion may be undermined.
- **Certain chemicals** in foods and drinks can cause intolerance, including amines in some cheeses, and caffeine in coffee, tea, and chocolates. Some people are more susceptible to these chemicals than others.
- Natural occurrence of **histamine** in foods.
- **Presence of salicylates:** Salicylates are present in most plant-sourced foods, including the majority of fruits and vegetables, spices, herbs, tea, and flavour additives. Mint flavouring, tomato sauce, berries, and citrus fruits have particularly high levels."



## CLINIC ASSESSMENT

In terms of clients in clinic, there are various ways you can ascertain if they are suffering with intolerance, and symptoms will be a good indication of whether investigation is needed.

In general, most people with food intolerance tend to suffer with stomach pain, bloating, wine, diarrhoea, skin rashes and itching.

"Bloating, gas, constipation and diarrhoea can be just some of the symptoms caused. Lethargy, 'foggy' brain, migraine and aching joints are also common," Bodenham commented.

Holford added: "These symptoms usually come on a few hours after eating the food."

In terms of reaching a diagnosis, there are many steps available, but it is important to remember when testing that you will likely need more than one as no single one can tell you everything that is going on. For a start, they may need to be referred to their GP to first rule out coeliac disease.

Holford added: "We do the FoodScan programme. The test will analyse your IgG reactions to 113 foods, providing you with clear results and nutritional support to help you replace your problem foods and optimise your diet. Key benefits are easy fingerprick blood test, tests for food specific IgG reactions to 113 food ingredients and expert laboratory testing and analysis."

You may also want to perform tests on a client's nutrient levels, especially if they are suffering with leaky gut, as this can impair absorption.

## ELIMINATION DIET

The only way for a client to ease the symptoms associated with food intolerance is to cut out the offending foods, once testing has been completed to

confirm what the offending food is.

In terms of advice going forward, Holford advised: "Eliminate any foods that are could be the problem and write a food diary when they are introduced to see which ones cause a reaction. Include anti-inflammatory foods like ginger, turmeric to help calm down any inflammation in the gut and include omega 3-rich foods like oily fish, walnuts and flaxseed.

**"Bloating, gas, constipation and diarrhoea can be just some of the symptoms caused. Lethargy, 'foggy' brain, migraine and aching joints are also common."**

Bodenham agreed that an elimination diet is the way to move forward.

"The culprit foods should be avoided – usually for up to three months in the first instance and then gradually reintroduced. The good news is that there are many tasty substitutes to the common food intolerance culprits; coconut butter can be used as a dairy free spread and you can buy excellent wheat free flours, dairy free milks and even egg replacers. Detailed information should be provided to the client, with alternative food options to avoid the risk of nutritional deficiencies."

Along with dietary recommendations, those with food intolerance may also require certain supplements, especially when it comes to supporting digestive health. A good quality probiotic, for example, is necessary, and in addition, you could recommend digestive enzymes and glutamine to help heal the gut.

Bodenham recommended: "Supplements can be used to support digestive function and gut microbiota balance, as well as addressing leaky gut issues. Glutamine is an amino acid that provides fuel for the cells of the gut lining, supporting growth and gut cell maintenance. Additionally, supplementing with probiotic bacteria may help to address imbalances in gut flora and enhance immunity. A multivitamin and mineral supplement can help to ensure that there is no deficiency of vital nutrients."

## LONG-TERM EFFECT

Those with food intolerance can also experience associated issues.

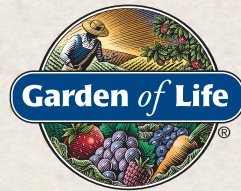
"Food intolerance may also be linked with anxiety (acute or chronic), headaches, insomnia, water retention, joint pain, fibromyalgia, asthma, chronic fatigue syndrome, depression, gastritis, inflammatory bowel disease, itchy skin, hyperactivity disorder and irritable bowel syndrome," Bodenham advised.

Holford added: "Asthma, eczema, fatigue, fibromyalgia, headaches, rheumatoid arthritis, joint and muscle pain, anxiety, recurrent infections."

There may also be an issue around nutritional deficiencies as you may not be absorbing all the nutrients you should be.

Holford explained: "There can be deficiencies as the body may not be absorbing key nutrients and also if you exclude certain food groups like lactose (calcium etc.) People with lactose intolerance can become deficient in key nutrients, such as calcium if they don't include additional foods that have calcium in. A well-balanced diet rich in calcium and vitamin D is important for healthy bones. Good sources of calcium include dark green, leafy vegetables and calcium-fortified foods." ●





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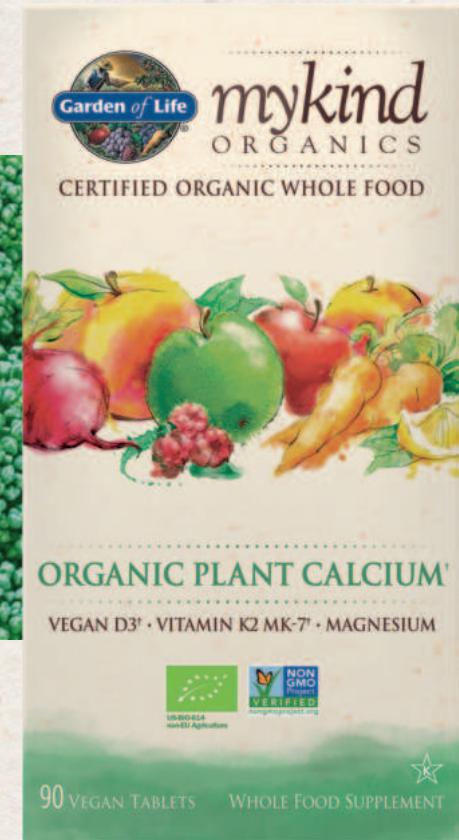
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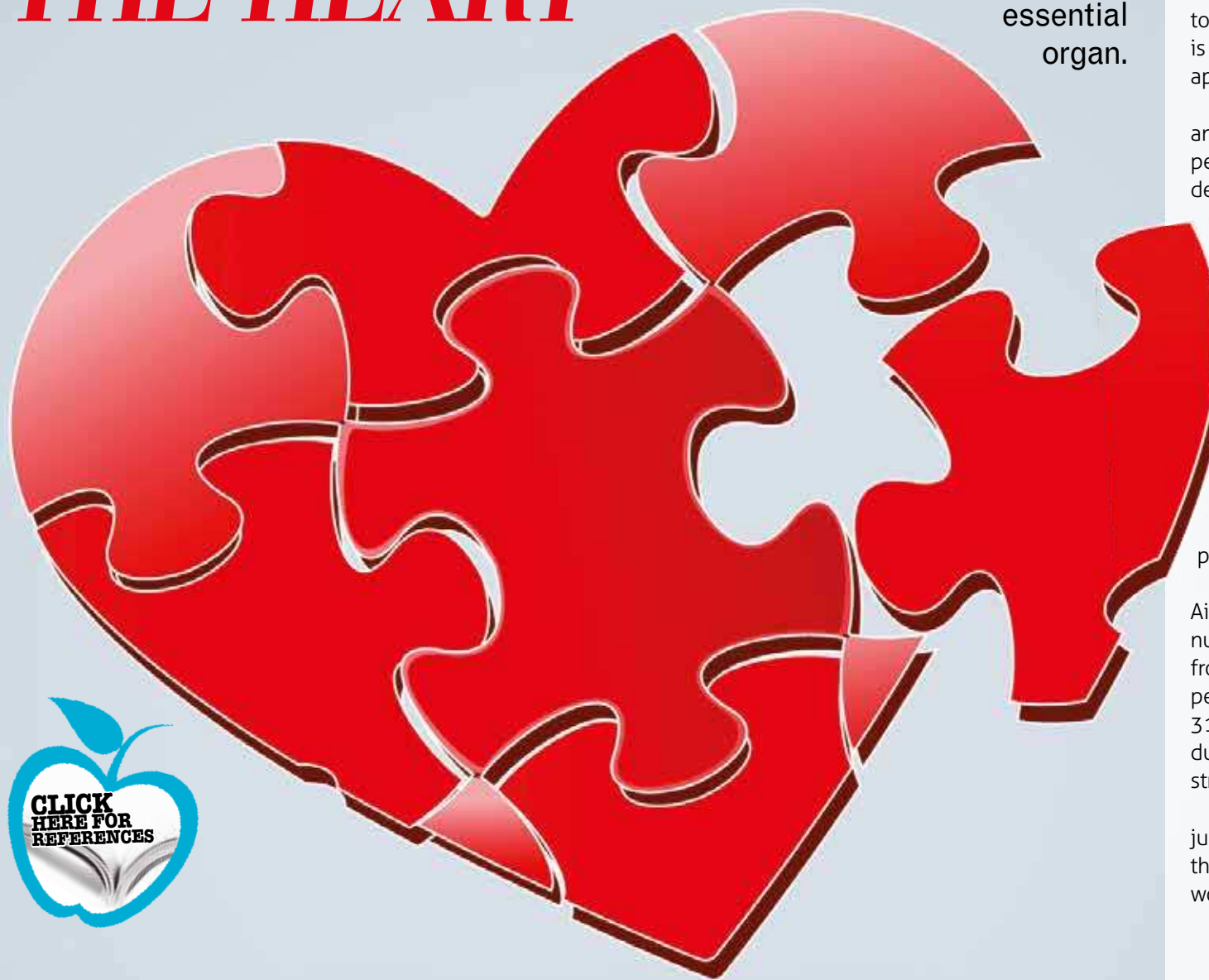


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# SPOTLIGHT ON THE HEART

Nutrition experts reveal their recommended protocols for this essential organ.



**T**here is no getting away from the stark statistics when it comes to the heart; cardiovascular disease (CVD) still ranks as both the biggest cause of death globally and in the UK, and being one of the biggest areas of expenditure for the NHS.

The most frustrating element of this is that heart related ill health is one of the areas that responds well to nutritional therapy, with the old adage 'prevention is better than cure' being incredibly relevant when applied to the heart.

Nutrition expert, Patrick Holford, commented: "Heart and circulatory disease causes more than a quarter (26 per cent) of all deaths in the UK; that's nearly 160,000 deaths each year, an average of 435 people each day or one death every three minutes. There are around seven million people living with heart and circulatory disease in the UK; 3.5m men and 3.5m women.

"Coronary heart disease (CHD) is the most common type of cardiovascular disease. CHD is the most common cause of heart attack. In the UK, there are 188,000 hospital visits each year due to heart attacks; that's one every three minutes. An estimated 915,000 people alive in the UK today (640,000 men and 275,000 women) have survived a heart attack and over half a million people in the UK are living with heart failure."

Jenny Logan, Technical Training Manager at Natures Aid, added: "Cardiovascular diseases (CVDs) are the number one cause of death globally. More people die from CVDs than any other cause. An estimated 17.7m people died from CVDs globally in 2015, representing 31 per cent of all global deaths. Of these, 7.4m were due to coronary heart disease and 6.4m were due to stroke.

"The NHS spent more than £6.8 billion treating CVD just in England in 2012/13 and states that 'Measures that may reduce the burden of cardiovascular disease would be very welcome'."



Jenny Carson, Technical Services Manager at Viridian Nutrition, added that heart problems lead to premature death.

"Heart conditions contribute to a large proportion of premature deaths, specifically deaths prior to the age of 75 years<sup>1</sup>. In 2014, it was reported that 25 per cent of male premature deaths and 17 per cent of female were caused by CVD<sup>1</sup>," she explained.

However, Egzona Makolli, Technical and Commercial Nutritionist at Kinetic, continued: "Although since the 1970s, statistics have gradually decreased which show that overall heart health deaths are decreasing, figures are still high, which highlight how crucial heart health is."

And Carson also pointed out: "Since the 1980s, both CVD and CHD death rates have declined considerably. Between 1980 and 2013, age-standardised CVD death rates declined by 69 per cent in England, 67 per cent in Wales and Scotland, and 74 per cent in Northern Ireland<sup>1</sup>. While between 1974 and 2013, UK age-standardised CHD death rates declined by 73 per cent in those dying at any age and 81 per cent for those dying before age 75<sup>1</sup>.

"Furthermore, it is apparent that there are greater cardiovascular deaths over the winter. In the winter of 2012-2013, deaths from CVD increase by over 7,000 in England, Scotland and Wales<sup>1</sup>. Yet, deaths from heart related issues are increasing, specifically those from stroke, pulmonary heart diseases, heart failure and atrial fibrillation."

## RANGE OF RISK FACTORS

There is so much we can do to reduce our risk of

## THE HEART EXPLAINED

There are a number of conditions related directly to the heart, or to health issues that can raise the risk of heart problems.

Carson commented: "Cardiovascular disease includes atrial fibrillation (an irregular heart rate), coronary heart disease (angina, heart attack and heart failure), diabetes hypercholesterolemia (excess cholesterol), hypertension (high blood pressure), kidney disease, peripheral vascular disease (affecting blood vessels and often characterised by localised numbness or factors related to a loss of blood supply), stroke and transient ischaemic attack, and vascular dementia (caused by reduced blood flow to the brain)."

Why people suffer with heart problems is varied, but in terms of why it happens, Carson explained: "CVD is generally due to a continued reduction in blood flow to the heart, brain or body caused by atheroma or thrombosis, which presents as the accumulation of blood lipids and macrophage foam cells in the artery walls<sup>1</sup>. Thus, such atherosclerotic plaques build up in arteries during adult life, that can eventually cause narrowing of the arteries, or trigger a local thrombosis, which completely blocks the blood flow. Incidence increases with age, consequently, it is increasingly common after the age of 60, but rare below the age of 20<sup>1</sup>."

And Carson turned her attention to hypertension.

"The Global Burden of Disease Study outlined hypertension as the most important global risk factor for morbidity and mortality<sup>11</sup>. Equally, hypertension is one of the strongest risk factors for almost all different cardiovascular diseases acquired during life<sup>6</sup>. Surprisingly, as many as seven million people in the UK are living with undiagnosed hypertension," she commented.

"As elevated blood pressure has few symptoms, it is pretty much undetected unless it is specifically measured. Hypertension puts increased pressure on blood vessel walls, ones that already have a build-up of atherosclerotic plaques that initiate the increase in pressure within the vessel. Consequently, this affects the heart's ability to pump blood effectively and is known to contribute to heart failure."



developing heart-related problems, and it is never too late to act on these.

Holford broke these down into different categories, commenting:

■ **"Medical:** High blood fats, high glycosylated haemoglobin, high blood cholesterol, high blood homocysteine, high lipoprotein.

■ **"Diet:** High GL diet, too much meat and dairy, too much alcohol, too little antioxidant-rich foods and nutrients, too little B vitamins, too little potassium, magnesium and calcium.

■ **"Lifestyle:** Smoking, lack of aerobic and resistance exercise, stress."

Of course, genetics also play a role in the long-term health of your heart, but that isn't to say the preventative message should be ignored.

"Although there are some genetic factors in heart disease and type one diabetes, generally, many of the risk factors are avoidable simply by making healthier lifestyle and dietary choices. Once disease has developed, diet, lifestyle and supplementary measures can all be taken to modify the situation," Logan advised.

Makolli added: "Lifestyle risk factors (alcohol use, tobacco use, high blood pressure, high body mass index, high cholesterol, high blood glucose, low fruit and vegetable intake and physical inactivity, account for 61 per cent of all cardiovascular deaths."

Looking in greater detail, there are some specific factors people should be aware of in terms of prevention to reduce their risk.

Logan explained:

■ **"Low levels of antioxidants:** Free radicals damage cholesterol and fats, which, in turn, damage the arteries and lead to the development

of plaque. Ensuring a healthy intake of antioxidants in the diet has been linked to a decreased risk of heart disease.<sup>(1)</sup>

■ **Low levels of essential fatty acids:** People with healthy levels of omega 3 have been shown to have a much lower risk of developing heart disease. Healthy levels of omega 3 fats have been linked to reductions in LDL cholesterol, inhibition of platelet aggregation, reduction in blood pressure, improvement of circulation, and reductions in inflammation.

■ **Low magnesium:** Magnesium is required for healthy muscle function – so will support a strong pumping action in the heart. Ensuring healthy magnesium levels has been linked to decreased blood pressure and improvements in heart function and circulation.<sup>(3)</sup>

■ **Elevated homocysteine:** Raised homocysteine is linked to artery damage and an increased risk of heart attack and stroke.<sup>(4)</sup>

■ **Poor calcium handling:** It is thought that a failure to properly absorb and utilise calcium from our diet and from supplements can contribute to plaque formation and 'hardening' of the arteries. Many women with osteoporosis also suffer with atherosclerosis, indicating they were not low in calcium, but did not use it properly.

■ **Insulin resistance:** Failure to address insulin resistance will lead to the development of type two diabetes, which is bad news for the heart. People with diabetes tend to have higher 'bad' cholesterol and fats in their blood and according to the British Heart Foundation, diabetes significantly increases the risk of developing CVD."

## PREVENTATIVE MEASURES

As already highlighted, there is a huge amount that a healthy lifestyle can do in terms of how the heart ages.

"Changes to diet and lifestyle can all help to prevent issues which have developed from getting worse and reaching the critical point where a heart attack or a stroke will occur. They can also reduce platelet aggregation, support a healthy pumping action, improve circulation and decrease blood pressure – meaning that the health of the cardiovascular system, and the risk of heart attack and stroke can all be diminished by changing diet and lifestyle choices<sup>(5)</sup>," Logan commented.

And Makolli pointed out: "Current westernised diets are full of processed foods and refined sugars, which can increase the risk of heart disorders compared to diets rich in vegetables, fruits and healthy fats, such as the Mediterranean, which has been shown to lower the risk of heart disorders. Eating too much processed foods, fried foods, refined foods and foods high in salt and sugar can cause heart diseases, such as hypertension, and can also lead to an increased risk of developing coronary heart disease or heart related disorders."

Frankie Brogan, Senior Nutritionist at Pharma Nord, added: "With alterations to modifiable risk factors, the heart can improve. Cardiologists have noticed in some cases that NT-proBNP, a peptide that indicates levels of heart stress and risk of heart failure, can be decreased.

"After identifying modifiable risk factors, suggest ways the client can tackle these in a way that is likely to be achievable for the client. For instance, telling an overweight client who is exercise-adverse to hit the gym may not initially work as well as suggesting an occasional walk to work or committing to taking the stairs over the elevator."

Carson pointed towards current national advice, commenting: "Preventative lifestyle and dietary interventions have the potential to reduce CVD risk.

## CHOLESTEROL CHECK

One of the most important risk factors to be aware of is a client's cholesterol.

"Cholesterol status as measured by total cholesterol, LDL cholesterol, HDL cholesterol and the HDL:LDL ratio are used by the medical profession to judge risk<sup>v</sup>, where a high ratio indicates a reduced risk," Carson explained. "Often, LDL cholesterol is referred to as 'bad' and HDL as 'good', yet also the quality of the cholesterol that are important. For instance, oxidized and dense cholesterol molecules have a greater risk of damaging blood vessels than those that are non-oxidised and not densely compacted.

"Furthermore, it is important to note that the lipoproteins are transportation molecules for cholesterol molecules. LDL shuttles cholesterol into circulation, while HDL shuttles cholesterol from circulation to the liver for excretion<sup>vi</sup>. Cholesterol status on CVD risk remains controversial, yet is clinically still used and considered relevant currently."

Carson also highlighted serum triglyceride levels as a further marker, commenting: "These are dietary saturated fat, but also excess carbohydrates can be transformed into triglycerides by the liver to be stored in fat cells. Both factors are highly pro-inflammatory and increase the risk of blockage within the blood vessels that supply the heart.

"Both type 1 and type 2 diabetes are associated with increased risk of CVD<sup>vii</sup>. Diabetes is highly inflammatory and factors such as glycated haemoglobin (HbA1c), insulin resistance, poor insulin production and the associated elevated BMI cumulatively put the heart under pressure to function<sup>viii</sup>. While elevated blood glucose and HbA1c are potentially damaging for the blood vessels, kidneys and heart tissues<sup>8</sup>."



Guidelines published by NICE and WHO direct public health in a manner that would help to prevent CVD. They aim to address the risk areas defined as poor diet, physical inactivity, smoking and excessive alcohol consumption<sup>iv</sup>. While the guidelines aim to reduce the high incidence of cardiovascular disease, it is expected that a two-fold benefit will occur in respect of helping to prevent other major causes of death and illness<sup>12</sup>.”

## HEART HEALTHY PROTOCOL

In terms of diet – which is where any recommendations should start, given the damaging impact poor quality food has on the heart – there are many simple changes you can recommend.

Holford suggested:

■ **“Eat the right diet:** A low GL diet that includes plenty of oats, barley, beans and vegetables to get plenty of soluble fibre, folic acid and magnesium. Avoid sugar, deep-fried foods and salt, cut back on meat, cheese and other high-fat foods.

■ **Include plenty of healthy fats:** Omega 3 (oily fish), if vegetarian, then seeds and nuts (chia, flax and pumpkin seeds).

■ **Get to know plant sterols:** Cholesterol-busting plants, such as soya, almonds, seeds, oats, lentils and beans.

■ **Eat greens and beans to lower homocysteine:** All rich sources of the B vitamins, which are vital for supporting methylation process. Add in fish and lean meat or eggs, which contain vitamin B12.

■ Ensure your diet is **antioxidant rich**.

■ **Look at addictions:** Coffee, chocolate, alcohol and cigarettes – try and cut these out or at least reduce.”

Makolli added: “It’s best to consume a healthy balanced diet low in refined sugar with plenty of fruit and



vegetables and plenty of fibre. Fibre can be consumed from wholemeal, bread, oats, wholegrain cereals and plenty of fruit and vegetables. Eat fish at least twice a week, especially oily fish, such as mackerel, salmon and sardines as these are a great source of essential omega 3 fatty acids, which can help protect against heart diseases. Consume a diet which includes an intake of vegetables, fruits, wholegrains, poultry, fish, legumes, nuts and limit the intake of sugar, sweets and sweetened beverages.”

Carson advised: “A dietary protocol that is sustainable and achievable is highly important, unfortunately, it can be a lifetime of poor dietary choices and lifestyle habits that increase the risk of CVD. It is vital that the Nutritional Therapist communicates to the client’s doctor and forges a joint partnership that focuses on the client’s care. Several observational studies have reported malnourishment, sub-optimal protein intake and under calorific intake<sup>ix</sup>. Subsequently, a protocol should focus

on anti-inflammatory foods, nutrient density, adequate omega 3 and adequate protein intake.

“Further support should include digestive and stress function for optimal absorption and reduced stress load. This would look something like increased vegetable variety and intake, improved oily fish, flaxseed, pumpkin seed, algae and nut intake. The inclusion of protein powders to support protein intake, while seasoning food with lemon juice, herbs and spices in place of salt. In the preliminary phase of the intervention, stress management techniques can help, as we want the new dietary habits to be perceived as easy to adopt, rather than another stressor.”

Carson turned her attention to the Med diet.

“Studies such as the PREDIMED Study show that participants at high risk of CVD who were randomised to follow the Mediterranean

diet plus olive oil or nuts, or a low fat control diet.

Interestingly, both interventions reduced the risk of major cardiovascular events by around 30 per cent relative to the control group<sup>x</sup>. Other studies have assessed the Dietary Inflammatory Score Index and concluded that a lower inflammatory score was associated to reductions in cardiovascular risk<sup>13</sup>. The evidence shows that risk reductions can be exerted upon the adoption of lifestyle and dietary change.”

Looking in greater detail, Logan advised of the need to balance blood sugar levels and address insulin resistance by eliminating refined foods and simple sugars and replacing them with complex carbohydrates, wholegrains, vegetables, beans and pulses.

“Address dietary intake of essential fatty acids, remembering that conversion of plant sourced omega 3 to DHA and EPA is poor, especially in people with poor health, meaning that the consumption of oily fish is



highly desirable. Reduce saturated fats and eliminate trans fats and hydrogenates and address intake of salt and salty foods," she explained.

## LIFESTYLE GUIDELINES

If you see clients with high alcohol consumption, who are inactive and who smoke, these will be an important foundation in terms of any protocol.

"Smoking is one of the main causes of coronary heart disease, with statistics showing that after a year of giving up, the risk of a heart attacks falls to about half of a smoker. Statistics have shown that smokers are twice as likely to have a heart attack compared to non-smokers," Makolli pointed out, adding: "Lack of exercise can increase your risk of developing cardiovascular diseases. Current guidelines state that individuals should do 150 minutes of moderate-intense activity every week, which can reduce the risk of developing heart disease. Try to exercise at least for 30 minutes per day, which may include a walk or swim as statistics show people who do not exercise are more likely to get heart disease. It's essential to also maintain a healthy weight and manage diabetes if you have been diagnosed.

"Limit your alcohol as alcohol can raise blood pressure, increase cardiomyopathy and contribute to irregular heartbeats. These lifestyle changes can have an impact on overall cardiovascular health. It's essential to have regular cholesterol levels checked to ensure that your cholesterol levels are within the normal limits."

Carson added: "For those overweight or obese, improved body composition can reduce the risk of CVD. The Framingham Experience used participants of the Framingham Heart Study to assess the relationship between long-term overweight or obese status and CVD risk. In brief, overweight and obesity were associated with an increased risk for the development of cardiovascular risk factors and CVD itself<sup>(6)</sup>. The increased risk was observed across all cardiovascular end points in those overweight and obese, while significant adverse sequelae were observed in those who were overweight."

## FOCUS ON COQ10

One of the most critical recommendations in relation to the heart is coenzyme Q10 (CoQ10).

"Coenzyme Q10 is a must-have cardiac health supplement. Clinical trials have already demonstrated that Q10 supplementation can reduce the risk of cardiovascular events by up to 53 per cent. It's practically impossible to find in food, making Q10 supplements the only reliable way of achieving therapeutic doses," Brogan advised.

"Q10 is essential for cellular respiration and is highly concentrated in cardiac tissue. Our liver's endogenous Q10 production decreases as we age from our early 20s and if we take statin medication. Statins work by inhibiting the mevalonate pathway, which produces both cholesterol and Q10."

Logan added: "Research suggests that declining levels of CoQ10 plays a major role in many age-related conditions, particularly those in the cardiovascular system.<sup>(6)</sup> Healthy levels of CoQ10 are associated with a strong pumping action in the heart and less resistance to blood flow. Reducing resistance to blood flow is associated with decreased blood pressure. A meta-analysis in 2007 of studies on blood pressure showed the benefits of CoQ10 supplementation. The 12 trials reviewed involved 362 patients and assessed the overall efficacy and consistency of therapeutic action.<sup>(4)</sup> The results of the research showed the potential benefits for patients suffering from high blood pressure; a reduction of 17mm Hg was seen

overall in systolic blood pressure and a reduction of 10mm Hg in diastolic – with no serious side effects."

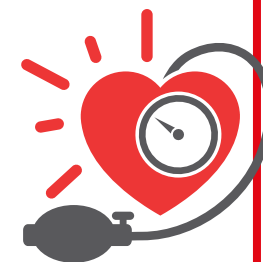
Be aware that clients may have been prescribed statins by their GP to control high cholesterol, but this in itself depletes levels of CoQ10.

"A number of side effects have been attributed to the use of statins, including headaches, low energy, muscle aches and pains, muscle weakness or tenderness, drowsiness, and sleep problems, and many of these side effects could be linked to decreased CoQ10," Logan explained.

She continued that it is important to advise on the right type of CoQ10.

"In every published study to date, ubiquinol was better absorbed than ubiquinone. One study concluded there was significant absorption of ubiquinol in the gastrointestinal tract following a single dose. There were also no safety concerns even at doses up to 300mg<sup>(9)</sup>," she explained. "A comparison study on the bioavailability of ubiquinol and ubiquinone found there was a significantly better increase in plasma Q10 from the ubiquinol supplement. This study also found ubiquinol improved blood cholesterol levels.<sup>(10)</sup>

"Unlike ubiquinone, ubiquinol has been found to have effective antioxidant properties. This is because it has two extra electrons. These electrons are important because they hold the key to neutralising free radicals."



## VITAMIN K2

Emerging research is confirming the benefits of vitamin K2 in relation to the heart.

"Vitamin K2 is another key supplement, especially for women. Not only can it help to prevent the development of osteoporosis<sup>(11)</sup>, it has also been proven to support heart health; a double-blind, randomised, clinical trial evaluated the benefits of 180mcg of vitamin K2 supplements as MK-7, taken daily over a three-year period, in a group of post-menopausal Dutch women," Logan advised.

"This trial not only showed substantial benefits in preventing age related stiffening of the arteries, it also resulted in an unprecedented, statistically significant improvement of vascular elasticity measured both with soundwaves and pulse wave velocity (PWW)."<sup>(12)</sup>



## ADD FATS

As already highlighted, essential fats are a crucial consideration.

Makolli advised: "Essential fatty acids only if you are not consuming these through the diet as these are essential. The body cannot produce these so they are required through the diet or supplement form. Omega 3 fatty acids are required throughout the body, especially the heart. There are three main types of omega 3 fatty acids; alpha- linoleic acid (ALA), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Studies have shown that omega 3 fatty acids play a key role in maintaining normal triglyceride levels, heart rate and blood pressure and may be beneficial for heart health."

Carson continued: "The latest research is controversial, for example, the *Cochrane Review* published that omega 3 essential fatty intake had no beneficial effect on CVD risk. However, the review is flawed with design and exclusion criteria, while a specific serum omega 3 standard was not used. What we do know is that the anti-inflammatory effect and cellular membrane structure incorporation of omega 3 essential fatty acids are essential for the heart tissues. While balancing omega 6 and omega 3 essential fatty acid intake is necessary for normal blood viscosity, healthy blood pressure and cholesterol regulation."

## ADDITIONAL NUTRIENTS

Carson highlighted nutrients that are high in proanthocyanidins (OPCs), such as pine bark extract and heavily pigmented berries.

"OPCs have been shown to significantly improve

cardiovascular risk factors through antioxidant, anti-inflammatory and antiplatelet effects. Mechanistic studies show that platelet activation is inhibited by OPCs through the prevention of thromboxane production<sup>xii</sup>. Further findings report OPCs regulate NF-kappa B, an inflammatory mediator and interrupts the pro-inflammatory cascade<sup>xiii</sup>," she explained.

"OPC driven vasodilation has been demonstrated through the secretion of vessel relaxing substances, nitric oxide (NO) and prostacyclin. In the presence of OPCs, endothelial nitric oxide synthase generates NO efficiently from its precursor arginine<sup>xiv</sup>. There is also strong evidence demonstrating the role of OPCs in reducing cholesterol levels. A clinical study found that taking OPCs for six weeks significantly increased HDL and lowered LDL in healthy volunteers, while a study of 40 patients with hypercholesterolemia found OPCs to significantly lower LDL and total cholesterol levels<sup>xv</sup>."

And Holford recommended: "Carnitine is made from two amino acids, L-lysine and L-methionine. However, it's better to get a direct supply, especially for heart muscle function. More than half of your heart's energy comes from fat, and since it's working hard every second it needs a steady supply. Carnitine is the delivery boy that brings in fatty acids to process for energy. It also takes away the toxic by-products. Carnitine helps your heart liberate the energy it needs efficiently. Without enough, your heart would struggle to function properly, causing heart and blood pressure irregularities. Toxic waste would also accumulate, leading to reduced blood flow (ischemia), particularly in the legs." ●



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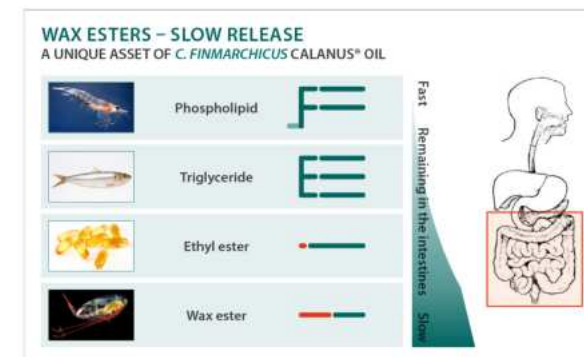


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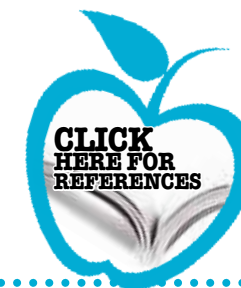
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# EXPERT ADVICE

Our panel of nutritional experts offer readers advice on dealing with a variety of issues.



## Q Can you explain the advantages of tinctures over capsules?

**ROSE HOLMES ADVISED:** Botanicals are fantastic therapeutic aids; most practitioners may benefit from increased familiarity with the huge range of herbs available, as well as from better appreciation of the different delivery methods available. Many nutrition practitioners are less familiar with tinctures and may not be aware of the advantages of this highly effective delivery system.

Tinctures are concentrated extracts using ethanol as solvent. A water-alcohol extraction process is used to ensure availability of herbal constituents, which might not necessarily be available when digesting whole powdered herbs. All plant parts can be used, leaf, flower, stem, root, bark and berries, either fresh or dried, with different outcomes

Whilst all tinctures are extracts, not all extracts are tinctures; tinctures require use of alcohol, specifically, ethanol, an alcohol that can be consumed. Liquid extracts can also be made with substances such as glycerine or vinegar, but these are not technically tinctures.

Ethanol is an excellent solvent for many constituents and able to dissolve substances less soluble in water, such as essential oils, resins and alkaloids. The alcohol also acts as a preservative.

Extracts should have a final ethanol percentage of at least 20 per cent.

Tinctures are possibly the most effective delivery system for herbs. There are a variety of reasons for this. Firstly, there are no added ingredients, just plant material and solvent (alcohol, water). There are no binders or capsule shells. And the ethanol acts as a preservative, allowing long shelf-life, whereas capsules can become stale and lose potency. This means tinctures can be less problematic where allergens are a factor, especially if gluten free ethanol is used.

Tinctures are absorbed quickly as the body doesn't need to break down the cellulose content of the plant and is delivered direct to the bloodstream; this is also advantageous if there are digestive disorders which may hinder absorption, including in hypochlorhydria, which can be an issue for many for older individuals. Because they can have almost immediate effect, tinctures are also particularly advantageous in acute conditions, such as cold, 'flu, pain and anxiety.

Tinctures allow for easier and very flexible dosing, which can vary according to age, sensitivity and severity of condition. Tinctures can often be used for children and a few drops of tincture are often more readily concealed than powder from an opened capsule or crushed tablet. Tinctures are also advantageous for those who have difficulty swallowing capsules or tablets.

For safe, fast-acting potency, consider tinctures.



## THE EXPERT



Rose Holmes, Dip.ION, BSc (Hons), PGCE, mBANT, CNHC is a Registered Nutritional Therapist with a special interest in chronic illness, circadian rhythm disruption and healthy ageing. She is the Education and Training Manager at Rio Health and provides training to other practitioners and health professionals on natural therapies.

Q

Can you detail any associated issues to be aware of when advising clients with type 2 diabetes?

**WENDY RICHARDS EXPLAINED:** Type 2 diabetes is a chronic metabolic condition that is characterised by insulin resistance (that is, the body's inability to effectively use insulin), in combination with insufficient insulin production by the pancreas. Together, this results in high blood glucose levels (hyperglycaemia). Type 2 diabetes is commonly associated with obesity and physical inactivity.

Type 2 diabetes can be easy to ignore, especially in the early stages when you're feeling fine. But diabetes affects many major organs, including your heart, blood vessels, nerves, eyes and kidneys. Controlling your blood sugar levels can help prevent these complications.

Ninety per cent of all diabetes is preventable by eating the right diet and exercising appropriately. This statistic makes it the perfect poster child for the power of the blood type diet in diminishing conditions. Simple carbohydrates are broken down into glucose, a sugar and usable energy source for your body's cells. Insulin signals your cells to absorb that glucose and use it for energy. If you are overloading your body with too much food, especially simple carbohydrates, your insulin remains consistently high and you won't be able to effectively metabolise glucose for energy. This leads to excess glucose in the blood, and eventually type 2 diabetes. A healthy diet for your blood type will support the body in reducing the main offenders causing these harmful reactions.

Risk factors for type 2 diabetes include:

- Overweight or obese.
- Aged 45 or older.

- Have a family history of diabetes.
- Are African American, Alaska Native, American Indian, Asian American, Hispanic/Latino, Native Hawaiian, or Pacific Islander.
- Have high blood pressure.
- Have a low level of HDL ('good') cholesterol, or a high level of triglycerides.

Lectins have been shown to cause insulin resistance. Some food lectins are shaped in a way that they look like insulin to your body. This means that they can stick to the insulin receptors on your cells (the binding sites for insulin) and cause too much glucose to get inside. Since lectins are also proteins, they can take the place of insulin and bind to the receptor without mediation. When the insulin comes along and tries to attach to the insulin receptor, it merely bounces off the cell because the lectin is already occupying the receptor. Insulin then must be sent back to the pancreas to be broken down, rendering the cell insulin resistant.

There are important differences among the blood types in the risk factors for diabetes, as well as in the pathways to disease. A new study by researchers from France explore the possibility that a person's risk of developing type 2 diabetes may be influenced by their blood type. According to the research team, including Dr Guy Fagherazzi, of the Center for Research in Epidemiology and Population Health at the Gustave Roussy Institute, in France, they analysed data from 82,104 women who were a part of the French E3N study. ABH non-secretors, and especially Lewis negative individuals, are at a greater risk of developing diabetes (especially adult onset diabetes), and they

might be at a greater risk of developing complications from diabetes. Findings suggest that an increased proportion of non-secretors are found among patients with diabetes, particularly of the insulin-dependent diabetes type.<sup>(14,15)</sup>

The Lewis negative (Le a-b-) red blood cell phenotype appears to confer the greatest risk of developing diabetes. This blood type is observed more than three times more frequently (29 per cent) in diabetics, irrespective of their clinical type. Non-diabetics categorised as low insulin responders to glucose are also significantly more likely to be Lewis negative.<sup>(16)</sup> Among individuals with juvenile diabetes mellitus, the prevalence of severe retinopathy (a side effect of diabetes) is lower in ABH secretors than in the ABH non-secretor group.<sup>(17)</sup>



## THE EXPERT



Wendy Richards is a Certified Practitioner in practice and principles of the blood type diet. She is also a Fellow of the Institute of Human Individuality (MIFHI). She represents SWAMI, for the ultimate in personalised nutrition or people who are still battling chronic conditions and has been involved in the health and fitness industry for more than 20 years, and is passionate about the use of nutrition in the prevention and treatment of disease and enhancement of longevity.

## Q What role can omega 3 play in cognitive function in children?



### THE EXPERT



Rachel Bartholomew BA(Hons) Dip ION MBANT NTCC CNHC has practiced as a Nutritional Therapist since completing her study with the Institute of Optimum Nutrition in 2004. With a busy clinical practice in Lancashire, Rachel has a particular interest in children's health and nutrition, with a keen focus on improving nutrition education at an early age. Rachel combines her clinical work with a freelance consultant role for Nutri Advanced, where she regularly produces a wide range of technical articles and newsletter items.

**RACHEL BARTHOLOMEW ADVISED:** Optimal cognitive performance is essential throughout all stages of life: During childhood, it is critical to optimise brain development; throughout adulthood, it is important to maintain optimal cognitive functioning; and it is crucial to defer cognitive decline and prevent dementia in old age. Considering the period from birth through to adolescence is considered the primary growth and development phase for the human brain, it is vital that all is done to support this important time.

The human brain is made up of 60 per cent fat. We know that fatty acids are amongst the most crucial molecules that determine your brain's integrity and ability to perform. Essential fatty acids (EFAs) are required for the maintenance of optimal health but they cannot be synthesised by the body and must be obtained from dietary sources. The two most important long chain omega 3 fatty acids include eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which can only be obtained from oily fish, including salmon, anchovies, sardines and fresh tuna. However, low intake of EPA and DHA is commonly observed in the Western diet and might negatively affect children's brain development and function.

A range of studies have highlighted the importance of omega 3s on cognitive function and performance in children, from infancy right through to adolescence. It was reported that infants who had powdered formula containing abundant DHA showed superior cooperation between eyes and hands, concentration, and social skills, and had higher scores in an intelligence test.<sup>1</sup> Children aged seven to nine who consumed a greater amount of omega 3 showed improvements in relational memory that was superior to children who consumed a lower amount of omega 3s.<sup>2</sup> A number of studies have highlighted the association between fish intake and cognitive functioning in adolescents. One study showed that adolescents aged

15 who regularly consumed fish had significantly better academic performance than their non-fish or less fish-consuming peers, while another demonstrated that high fish consumption in boys at age 15 was associated with better cognitive performance at age 18.<sup>3,4</sup> Finally, higher fish intake was associated with more advanced vocabulary and an almost significant higher average end-term grade in 700 adolescents aged 12-18.<sup>5</sup>

It appears that DHA is the more important of the two omega 3s when it comes to supporting cognitive function, and given it accounts for over 50 per cent of all brain polyunsaturated fatty acids (PUFA), it is clear to see why. Trends are emerging from the current research suggesting that consumption of long chain omega 3 PUFA, particularly DHA, by health school-aged children may enhance cognitive performance, particularly in those who normally consume diets low in low chain omega 3 PUFA.<sup>6</sup> Richardson et al. showed that DHA supplementation improved reading in children who underperformed in reading.<sup>7</sup> Children with reading scores  $\leq$ 20th centile gained an additional 0.8 months in reading age, while children in the  $\leq$ 10th centile gained 1.9 months in reading age with DHA supplementation.

The UK Scientific Advisory Committee on Nutrition (SACN) suggest we consume two servings of fish (140g each) per week, one serving of which should be from oily fish.<sup>8</sup> However, a 2017 study showed that the proportion of children in the UK meeting the intake recommendations for total fish and oily fish intake is extremely small, with only 4.7 per cent of two-18 year olds meeting the total fish oil recommendation, 4.5 per cent the oily fish recommendation and 1.3 per cent meeting both the total fish and oily fish intake.<sup>9</sup> The benefits of omega 3s for cognitive function are now well documented and provide a good basis for including oily fish in the diet or recommending a daily fish oil supplement from a young age.





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# ASTAXANTHIN

## – A PRACTITIONER GUIDE

**Penny Shaw** examines the mechanisms of astaxanthin.

**A**staxanthin is a fat soluble carotenoid from the same xanthophylls family as lycopene, beta-carotene, zeaxanthin and lutein. The xanthophylls family is an oxygen-carrying carotenoid pigment, which inhabits living organisms, such as plants, algae and types of fish.

Although being similar in structure to carotenoids, astaxanthin does not have pro-vitamin A activity<sup>(29)</sup>. Astaxanthin is red in colour, is found typically in marine organisms and is responsible for the pink colouration in salmon, shrimp, krill and other crustaceans. It was first isolated from a species of lobster in 1938, making it one of the earliest carotenoids to be identified. It is also found in the feathers of avian species, such as quail and flamingo, and in propolis, the substance obtained from bees.

This unique member of the carotenoid family has two hydroxyl groups and is long enough that it can span the human cells lipid bi-layer and remove free radicals<sup>(11, 12, 13)</sup>. Astaxanthin also contains conjugated double bonds, which provide the molecule with a strong antioxidant capacity by donating electrons and reacting with free radicals, ultimately abolishing the free radical destructive cascade within cells<sup>(25)</sup>. When a nutrient has such capability, it can have enormous value for the body in a variety of pathophysiological functions.

### HOW IT'S MADE

Astaxanthin can be made synthetically, however, a natural source of astaxanthin is preferred in supplementation, originating from krill or, a more sustainable option, from *Haematococcus pluvialis*. *H. pluvialis* is a freshwater, unicellular green microalgae. Synthetic astaxanthin contains additional isomers and is more bioavailable<sup>(17)</sup>, but *H. pluvialis* provides astaxanthin in an esterified form, which is the richest and ultimately better source of astaxanthin. It produces the most dry weight amount<sup>(1,2)</sup> and has a significantly greater antioxidant potential<sup>(3)</sup>, being 50 times stronger in free radical elimination<sup>(18)</sup> and has been safely consumed as a nutraceutical supplement for nearly two decades<sup>(3, 5, 6)</sup>.

Carotenogenesis is stimulated (to extract astaxanthin) when its host is put under stress through nutrient deficiency, salinity, high temperatures and high irradiance<sup>(2)</sup>. After exposure to such stressors, and during transition from the green vegetative cells to red aplanospores, astaxanthin begins to accumulate as fatty acid mono or diesters in cytoplasmic lipid droplets<sup>(4)</sup>.

### PHARMACOKINETICS

Astaxanthin has both hydrophilic and lipophilic properties, but bioavailability is low<sup>(11)</sup>. So, to optimise utilisation of this powerful carotenoid, it should be encapsulated with a lipid-based partner<sup>(20)</sup> and taken after a meal that ideally contains fat so it can absorb through passive diffusion into enterocytes and then will undergo facilitated diffusion in the presence of fats<sup>(19, 31)</sup>. Being lipophilic enables astaxanthin to be carried by fat molecules to tissues in greater



requirement, such as the brain, retina and muscle<sup>(30)</sup>. Astaxanthin has been observed to direct to muscles and the heart<sup>(21)</sup>. This study also saw an increase in muscle strength/endurance when taking 4mg per day in healthy human volunteers compared to the placebo group.

A study in 2015 identified that astaxanthin can be considered in osteoarthritic conditions as it exerts inhibitory effects to matrix metalloproteinases. The ability to inhibit MMP also prevents oxidative stress associated with blood-brain barrier disruption.<sup>(23, 40)</sup>

## ANTIOXIDANT

Carotenoids such as astaxanthin are eminent for their therapeutic support within the ageing process. There has been a lot of research in the form of preliminary studies surrounding astaxanthin and its benefits. These have amounted to the consideration of astaxanthin as an immunostimulator and a 'super antioxidant', with one of the highest antioxidant potentials. It has been identified to decrease lipid peroxidation formation (including in cell phospholipid bilayers<sup>(14)</sup>), increase levels of antioxidant enzymes and suppresses ROS (reactive oxygen species), thereby limiting glycated protein/iron chelate-induced toxicity<sup>(24)</sup>.

Astaxanthin is widely used as a free radical scavenger to reduce oxidative stress. To put its title of super antioxidant into perspective, astaxanthin has been described as 65 times more powerful than vitamin C, 54 times stronger and 10 times more potent than beta-carotene and other carotenoids, and 100 times more effective than alpha-tocopherol<sup>(7, 8, 9, 10)</sup>.

## ANTI-INFLAMMATORY

Astaxanthin is also anti-inflammatory. Whilst some degree of inflammation is necessary for response to damage in the body, an equilibrium must be obtained in order to prevent chronic inflammation occurring and causing excessive harm to the body. Astaxanthin has been found to downregulate COX-2 and, therefore, PGE-2, nitric oxide and pro-inflammatory cytokines within various inflammatory mechanisms<sup>(34, 35, 40)</sup>.

Astaxanthin has also been recognised to cross the blood retina

barrier so it can exert its antioxidant and anti-inflammatory effects within the eyes. Use of astaxanthin in age-related macular degeneration has become vastly popular; you will often find astaxanthin included in many eye support supplements.

Astaxanthin can suppress gene expression of inflammatory mediators, such as TNF-alpha, interleukin 1-beta, and blocking NF-kappa-B dependant signalling pathways, which alleviates inflammatory states of ocular tissue<sup>(33)</sup>. It also directly blocks the activity of inducible nitric oxide synthase brought on by lipopolysaccharide-induced inflammation, further protecting the eye from damage<sup>(34)</sup>.

## NEUROPROTECTIVE

Astaxanthin has been studied for its propensity for neuroprotection in neurological diseases as it can effectively cross the blood brain barrier and defend against injury and degeneration<sup>(28,45)</sup>. This is crucial as oxidative stress is a key mediator of neurological diseases<sup>(25)</sup>. It has demonstrated neuroprotective properties against glutamate-induced neurotoxicity and beta-amyloid- induced cytotoxicity and its damage to red blood cells<sup>(26,27)</sup>. It can also reduce oxidative stress-induced toxicity of dopaminergic neurons and therefore potentially neurodegenerative diseases<sup>(38,39,42)</sup>.

## TESTOSTERONE

When combined with saw palmetto, an ingredient used predominantly in men's health, astaxanthin increased the inhibition of testosterone conversion to DHT, suggesting that it may improve the effects of saw palmetto as an 5-alpha reductase inhibitor and, therefore, be useful in the prevention of prostate conditions such as benign prostatic hyperplasia.<sup>(46)</sup>

## SKIN

Astaxanthin can also accumulate within the layers of skin. As mentioned, astaxanthin can be synthesised under stressors such

**"Astaxanthin is widely used as a free radical scavenger to reduce oxidative stress. Astaxanthin has been described as 65 times more powerful than vitamin C, 54 times stronger and 10 times more potent than beta-carotene and other carotenoids, and 100 times more effective than alpha-tocopherol."**

as via high irradiation. This is interesting as astaxanthin has been used to protect skin from UV-induced skin deterioration<sup>(22)</sup>. When a plant or animal comes under stress, such as through ultraviolet light, it synthesises astaxanthin as a survival mechanism to reduce potential damage. In keratinocytes of the skin, astaxanthin attenuates negative reactions of inflammatory markers in response to UVB rays<sup>(37,38)</sup>. Damage caused by UVA light to fibroblasts and epithelial cells may also be safeguarded from oxidation by astaxanthin and has been studied with encouraging results<sup>(41)</sup>. These mechanisms may protect not only the skin but the eyes too, from photo damage.

In vitro evidence postulates that oxidative polymerisation in melanocytes and inflammation in the epidermis (contribution to age spot) can be reduced by astaxanthin.<sup>(44)</sup>

In this article, the studies explored propose many benefits of astaxanthin to support against diseases because of its anti-inflammatory and antioxidant abilities. More research is required to expand our knowledge and gain conclusive understanding of this powerful phytochemical and its assistances within the body. ●

Penny Shaw studied Nutritional Therapy at the College of Naturopathic Medicine and now works as the Brand Quality Manager at G&G Vitamins.





# Nutrition in motion

When a sports professional discovered a gap in the market for scientifically developed supplements for both physical and mental performance, **Motion Nutrition** was born. With exciting NPD, Rachel Symonds heard more about the evolution of the brand.



As an athlete, Joe Welstead had come across his fair share of sports nutrition supplements. Yet, during his time as an international swimmer and Commonwealth Games finalist for Scotland, Joe couldn't find anything that met his demands, while also being of the right quality.

This set him and co-founder, Charles Matthews, on a new path, in which they decided to launch Motion Nutrition, a range of supplements that supported both those taking part in sports, but also for general good health.

The range started life with a range of protein products, but NPD has been evolving in the last year with the creation of its range of brain nootropics, moving the brand away from being solely targeted at sports nutrition.

"We launched Motion Nutrition in January 2016. The reason was simple; to offer sports supplements that benefit physical and mental performance, while also improving long-term health," Joe explained.

"Our goal is to make it easier for people to live a healthy and active life. We will develop products to ease any pain points towards achieving this. Convenience is key for busy individuals and we are working on convenient, organic and health-enhancing products that deliver on our quality criteria."

## A SPORTING BACKGROUND

As a competitive swimmer, Joe had a demanding schedule, and a crucial part of

his regime involved how he fuelled his workouts.

"I trained 25 hours per week on top of being a full-time student. I knew how to cook healthy meals, but this was not enough; I needed to learn how to fuel my body and mind to optimise my performance at the highest level," Joe explained.

"I worked closely and learnt a lot from some of the best sports nutritionists and performance physiologists at the Scottish Institute of Sport and, after years of trial and error on myself, I had a set of rules I followed which worked beautifully for me."

But finding what he needed was a different story, with Joe being insistent that he didn't want to compromise.

He added: "As an athlete, I was extremely frustrated with the lack of quality in sports nutrition products – their focus was mainly on taste and performance, with little regard to long-term health. This seemed absurd; I was involved in high level sport, yet I had no intention of damaging my health with artificial sweeteners and highly refined starches.

"Remove the elite sport angle, and you have amateur athletes and leisure sports enthusiasts whose overall wellbeing and

health should be prioritised at least in equal measure to their short-term physical performance. This is where Motion Nutrition comes in."

## NPD CRITERIA

Motion Nutrition's brand portfolio has expanded in recent months, most notably with its range of supplements designed to help tackle mental and physical stress.

"We've always focused on providing products that help people perform better and feel better. We realised in 2017 that a big element people face today is the amount of daily stress and mental challenges they go through. So, we started looking into natural compounds that can help you perform better mentally, reduce feelings of stress and anxiety, and promote deep restorative sleep," Joe explained.

"By working with leading neuro-scientists, we realised that by feeding the brain certain micronutrients and hormone precursors, it was possible to improve the health of your brain, while improving your daily mental performance and mental

grant us from nutritional practitioners and consumers."

Looking in closer detail at organic, this is a clear priority for the brand.

"We believe organic certification is the highest marker of quality you can achieve in a food product. Why? Because this covers every process, from soil to end product, including how far crops are from highly polluted areas, packaging materials and even warehousing conditions," Joseph explained.

"In addition to guaranteeing the absence of most pesticides, growth hormones, GM feed, and more, organic certification also guarantees higher nutritional value – up to 60 per cent more micronutrients in some cases. So, in a product intended to supplement your diet, this seems like a logical step to follow, doesn't it?"

## STANDING OUT

Sports nutrition is a busy one, and there are many 'me too' brands creating products that do not stand up to the standards that would be acceptable among nutritional therapists, both in terms of ingredients and efficacy. This is where Motion Nutrition differs, and is without question one of its USPs.

For Joseph and Charles, this is one of the founding principles and something they don't stray from.

"We don't cut corners. Every ingredient has a purpose. All our products are formulated by leading functional nutrition researchers, our powder products are all certified organic by the Soil Association, and we don't hide behind sweeteners, flavourings or bulking agents," he explained. "Rather than big marketing spends, we rely on the trust these quality markers



**Founders, Charles Matthews (left) and Joe Welstead**





wellbeing. This matched beautifully with our criteria for new products, and it's been an incredibly exciting development."

The result is Power Up and Unplug, the day-time and night-time nootropics, which launched in April and have gone straight to the brand's top selling position.

"This is in large part thanks to the support of nutritional practitioners, their appreciation for these products and the results they have been getting with their clients," Joe added.

And what criteria do the team set when they are developing new products?

"There are two standards we set ourselves with every new product. First, it must add value to what is currently on the market – we are not interested in copying existing products like for like. Second, it must meet our definition of a supplement, which is to add to your diet something you would otherwise find difficult to source from your regular meals, and to benefit both your physical or mental performance, as well as your long-term health," Joe explained.

As much as the brand was traditionally a sports nutrition brand, with its expanding portfolio of products targeted at both mental and physical stress, it is one that is proving

popular among the nutritional therapy community.

Joe advised: "Because we focus equally on performance as we do on health, each of our products delivers several therapeutic applications, making them ideal for many conditions faced by therapists. For example, our organic whey protein is an excellent source of highly bioavailable tryptophan, which can be of great benefit to sleep quality. Power Up and Unplug can both help with reducing stress, improving the production of thyroid hormones and reducing adrenal fatigue. Our organic pre-workout energiser can help improve blood flow – the applications are wide."

He added: "We supply products to practitioners primarily through the Natural Dispensary, offer staff training on our products and have a CPD-accredited webinar on Optimising Brain Health available to view via IHCAN Conferences." ●





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**The Academy of Nutritional Medicine (AONM) is an international interdisciplinary forum for advancing nutritional medicine.**

## EDUCATION & TRAINING



Training Seminars for Specialised Laboratory Testing—ArminLabs, Moleculera Labs, and Maintrac®—and in CST Therapies.

## CONFERENCES



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# AONM ANNUAL INTERNATIONAL CONFERENCE

SUNDAY 18 NOVEMBER 2018  
LONDON

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EVENTBRITE:

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LOCATION: Holiday Inn London Regents Park  
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Subjects include:

**Lyme Disease** ▫ **Fibromyalgia** ▫  
**ME** ▫ **MS** ▫ **OCD** ▫ **PANDAS/PANS**  
▫ **Tourette's Syndrome** ▫  
**Asperger's Syndrome** ▫ **ADHD/ADD**  
▫ **Eating Disorders** ▫ **Anxiety Disorders** ▫ **Sleeping Disorders**

# CPD DIRECTORY

If you want to top up your CPD points, take inspiration from these forthcoming events.

## Metabolic Syndrome

September 6 – Stockport

CPD hours: BANT two hours

Speakers: Ruth Tansey

Website: <https://bit.ly/2MPldcH>

## BANT supervision

September 12 – Cobham

CPD hours: BANT two hours

Speakers: Emma Stiles

Cost: £30

## BANT supervision

September 14 – Farnham

CPD hours: BANT two hours

Speakers: Ruth Taylor

Cost: £30

Website: <https://bit.ly/2l9z6jg>

## BANT supervision

September 21 – Chesham

CPD hours: BANT two hours

Speakers: Tracey Harper

Cost: £30

Website: <https://bit.ly/1plfhMc>

## BANT supervision

September 10 – Micklegate

September 11 – Birmingham

September 12 – Manchester

CPD hours: BANT two hours

Speakers: Dalbinder Bains

Cost: £30

Website: <https://bit.ly/2nPDNqC>

## BANT supervision

September 12 – Radyr

CPD hours: BANT two hours

Speakers: Beatrice Cutler

Cost: £30

## BANT supervision

September 17 – online

September 26 AM – Tunbridge Wells

September 26 PM – Shoreham-by-Sea

CPD hours: BANT two hours

Speakers: Carmel Buckley

Cost: £30

Website: <https://bit.ly/1NDt2vU>

## Brain Health

BANT Local Network Meeting

September 24 – Bristol

CPD hours: BANT two hours

Speakers: Clare Daley, Cytoplan

## BANT supervision

September 12 – Stroud

September 13 – St Werburghs

CPD hours: BANT two hours

Speakers: Natalie Gillan

Cost: £30

## BANT supervision

September 14 – Woolpit

CPD hours: BANT two hours

Speakers: Fiona Mealing

Cost: £30

Website: <https://bit.ly/210Najm>

## BANT supervision

September 20 – Milton Keynes

CPD hours: BANT two hours

Speakers: Felicia Jones

Cost: £30

Website: <https://bit.ly/2BsYouF>

## BANT supervision

October 1 AM – West Berkshire

October 1 PM – London

CPD hours: BANT two hours

Speakers: Kate Delmar-Morgan

Cost: £30

Website: <https://bit.ly/26gRsqu>

# FORTHCOMING WEBINARS

Target Publishing, which publishes *Nutrition I-Mag*, hosts a series of free webinars for practitioners. Register at [www.ihcanconferences.co.uk/webinar](http://www.ihcanconferences.co.uk/webinar)

## Why are our bodies destroying themselves? A functional approach to the growing tide of autoimmune diseases



**Presented by Robyn Puglia FdSc DipION mIFM**  
Tuesday, September 4, 6.30pm-7.30pm

Autoimmune disease is part of the growing tide of chronic illness that is overwhelming the western world. Cancer and cardiovascular disease are well known as part of this epidemic, but autoimmune disease affects more people than cancer and heart disease combined.

Even with all the emerging research over the last decade, and the surge in awareness in the alternative health fields, there is still a lack of understanding in appropriate assessment and therapeutic intervention of autoimmune disease, even less so regarding early identification and prevention.

The role of the gut and environmental triggers, when layered with genetic predisposition, is well accepted. But there are no hard and fast rules that apply, creating many shades of grey when dealing with autoimmunity in clinical practice. Some of the risk factors include inflammatory

reactions to food, chronic and acute stress, chronic infections, chronic inflammation, environmental toxins, vitamin D deficiency, insulin resistance, and unhealthy oestrogen metabolism. And, of course, the gut environment and the mucosal immune system play a pivotal both in loss of tolerance and initiation of immune perturbation, and health restoration and recovery of immune balance.

In this webinar, we will be discussing how best to assess the gut to identify imbalances that are triggering or perpetuating inflammation and immune dysregulation, what are the benefits and limitations of stool analysis in the autoimmune client, what steps you might take to restore and rebalance the gut environment, and whether or not everything we think we know about the gut today, might be proven completely wrong in the future.

## Manuka Honey Demystified



**Presented by Kim Bulder BHSc (CompMed), AdvDipHerbMed, AdvDipNat**  
Tuesday, September 18, 6.30pm-7.30pm

Manuka honey has attracted much interest from researchers and medical experts due to its unique therapeutic properties. It is well known for its use in wound healing, digestive ailments and oral health and has garnered a devoted following amongst consumers and practitioners alike. There also exists some uncertainty and misconception around Manuka honey and its health applications.

This presentation will summarise the health research to date, including the scientific research

into manuka honey's key active ingredient, MGO, the latest studies researching the use and efficacy of manuka honey for stomach ulcers and *Helicobacter pylori* infection, wound care and oral infections, and its potential use with the increasing prevalence of antibiotic resistance. The presentation will also help demystify the rating numbers, explain the different strengths, and provide guidance for the therapeutic usage of manuka honey.

## The Gut-Brain Axis: How our gut bacteria influence our mental health



**Presented by Joanna Scott-Lutyens BA (hons) DipION**  
Tuesday, October 2, 6.30pm-7.30pm

The prevalence of mental health conditions like depression and anxiety is a growing area of concern. The cause of these tend to be multifactorial and can be difficult for practitioners to support. However, the clear correlation between our compromised microbiome, and the rise in autoimmune, metabolic and neuropsychological conditions, offers a fascinating and novel approach.

With the research on the gut-brain axis growing,

the ways in which our gut microbes affect our emotional wellbeing are finally becoming a little more understood. In this webinar, Joanna Scott-Lutyens will discuss this area of health, and explain the ways in which our microbiome can influence our brain. Finally, she will discuss the research available on the gut-brain axis, how probiotics can be used in clinical practice to support mental health, and the exciting future ahead.



# WARM UP IN THE KITCHEN

As the weather turns colder, stay warm with these vegan-friendly recipes, packed full of healthy ingredients.



**Vegan shallot and vegetable nasi goreng**



**Chantenay vegetable chilli**



**BerryWorld blueberry and coconut rice pudding**

## Vegan shallot and vegetable nasi goreng (Serves 2)



Recipe courtesy of [www.ukshallot.com](http://www.ukshallot.com)

Use your favourite chilli sauce here; try it with sriracha or sweet chilli sauce or an authentic Indonesian Sambal Oelek sauce if you can find it.

**Preparation time: 15 minutes**

**Cooking time: 25 minutes**

### INGREDIENTS:

- 6tbsp oil
- 6 shallots, finely sliced
- 2 cloves garlic, sliced
- 3 shallots, sliced
- 2 carrots, cut into matchsticks
- 3cm fresh ginger, grated
- 250g spring greens, finely shredded
- 2tbsp soy sauce
- 1tbsp tomato ketchup
- Juice ½ lime, or more to taste
- 1-2tsp chilli sauce, to taste, plus extra to serve
- 250g cooked basmati rice

### TO SERVE:

- 50g peanuts, roughly chopped

### METHOD:

- 1 Heat the oil in a wok over a medium high heat and add the shallots. Fry for a good 15 minutes, stirring frequently, until they are deep golden brown, turning the heat down a little if they start to catch at the edges. Scoop from the oil with a slotted spoon and drain on a plate lined with a few sheets of kitchen paper. They will crisp up as they cool.
- 2 Drain all but a tablespoon of oil from the wok.
- 3 Set the wok back over the heat and add the garlic, stir frying for a minute until lightly golden. Add the shallots, carrots and ginger and fry for a further three minutes until the carrots are just starting to soften. Add the spring greens and keep frying for another three minutes.
- 4 Stir through the soy sauce, ketchup, lime juice and chilli sauce, stirring well to mix through.
- 5 Tip in the rice, season to taste with a little salt and pepper and stir fry for a final three minutes until everything is piping hot.
- 6 To serve, spoon the nasi goreng into warmed bowls. Top each with the peanuts and crispy shallots. Serve immediately with extra chilli sauce.

VEGETABLE CURRY



RICE PUDDING





## Chantenay vegetable chilli (Serves 4)

Preparation time: 15 minutes

Cooking time: Approximately 30 minutes

### INGREDIENTS:

- 1tbsp olive oil
- 1 medium onion, chopped
- 2 cloves garlic, crushed
- 250g Chantenay, whole and unpeeled
- 350g mixed vegetables, chopped (tinned sweetcorn, courgettes, mushrooms, red, yellow and green peppers all work well)
- 1 tin mixed beans
- 1 tin chopped tomatoes
- 300ml boiling water
- Salt and freshly ground black pepper

### SPICES:

- 2tsp ground cumin
- 2tsp ground coriander
- 2tsp dried oregano
- 1-2tsp dried chilli flakes
- 1tsp paprika (smoked or unsmoked)

### TO SERVE:

- Coconut yoghurt
- Fresh coriander leaves, roughly chopped

### METHOD:

- 1 In a large saucepan with a lid, fry the onion in the oil until soft (about five minutes), add the garlic and fry for a further minute.
- 2 Add the Chantenay, the chopped mixed vegetables and the spices and fry for two to three minutes, or until the lovely spice aromas rise from the pan.
- 3 Finally, add the mixed beans, tinned tomatoes and boiling water and bring everything up to the boil. Cover the pan and reduce the heat to a gentle simmer and cook for around 20-25 minutes or until the vegetables are tender. Check after 15 minutes or so and if the sauce is a little thin uncover for the remaining cooking time.
- 4 Serve sprinkled with the chopped coriander and a dollop of sour cream or crème fraîche.







## BerryWorld blueberry and coconut rice pudding (Serves 4)

Blueberries bursting into the creamy rice and coconut make this a luxurious pudding that could be served for a special occasion or just when you need cheering up after a long day.

**Preparation time: 10 minutes**

**Cooking time: 40 minutes**

### INGREDIENTS:

- 200g pudding rice
- 1 x 400ml can reduced fat coconut milk
- 500ml almond or oat milk
- 80g caster sugar
- 250g blueberries
- 50g desiccated or shaved fresh coconut

### METHOD:

- 1 Place the rice, coconut milk and almond milk into a large saucepan, add the caster sugar. Cook gently for approximately 20 minutes, stirring occasionally to stop the rice catching on the bottom of the pan.
- 2 Add the blueberries and cook for a further 10 minutes until the blueberries have softened but still hold their shape and the rice is cooked through.
- 3 Toast the coconut until golden.
- 4 Serve the rice pudding warm in heatproof glasses or bowls with a little of the toasted coconut stirred in and the rest sprinkled on top.

VEGETABLE CURRY



VEGETABLE NASI GORENG



# NATUROPATHY IN THE KITCHEN

Take tips from the experts at CNM and cook up these healthy treats.

## Banana and sour cherry muffins (Makes 10)

### INGREDIENTS:

- 100g coconut oil, melted
- 150g unrefined dehydrated coconut nectar
- 280g wholegrain spelt flour
- 1tsp (scant) bicarbonate of soda
- 1tsp baking powder
- 2 'flax' eggs – 2tbsp flax seed mixed with 5tbsp water
- 4 large ripe bananas
- 200g sour cherries, chopped
- 80g chopped pecans
- 80g coconut shavings, lightly toasted (optional)
- Pinch of sea salt

### METHOD:

- 1 Preheat the oven to 160°C fan/325°F/ Gas Mark 3 and line a muffin tin with paper cases.
- 2 Soak in hot water, with just enough to cover them, for 30 minutes (prevents the cherries burning in cooking).
- 3 Make up the flax egg and leave for 10 minutes.
- 4 In a food processor, combine the coconut oil and nectar. Then add in three bananas and blend until the mix is just combined.
- 5 Decant the mixture into a bowl. Add the other half of the banana after cutting it into medium chunks. Fold in the remaining ingredients until the flour is fully incorporated (save a few of the pecans and coconut shavings to garnish the top).
- 6 Place two tablespoons of mix into each muffin case, garnish the tops and bake for 30 minutes or until cooked through and the centres spring back when lightly pressed. Remove from the oven and allow to cool. Store in an air tight container for up to five days.



Recipe and photography by Francesca Klottrup, a Chef and Nutritionist, who lectures on CNM's Natural Chef and Vegan Natural Chef Diploma Courses at the College of Naturopathic Medicine. Find out more at [www.naturopathy-uk.com](http://www.naturopathy-uk.com)

## Lemon 'cheesecake' chia pudding (Makes 8)

### INGREDIENTS:

#### FOR THE BASE:

- 400ml filtered water
- 1 lemon verbena tea bag
- 300g pitted dates
- 200g Brazil nuts, roughly chopped

- 400ml can coconut milk
- ½ vanilla pod, seeds scraped out
- Finely grated zest and juice of 2 large lemons
- 12 pitted dates
- 300ml filtered water
- 125g chia seeds

#### FOR THE FILLING:

- 150g cashews, soaked in filtered water for 3-4 hours

#### FOR THE DECORATION:

- Toasted coconut flakes or dried rose petals

### METHOD:

1 To make the base, place the water into a saucepan and add the lemon verbena tea bag. Bring to the boil, then remove the tea bag and add the dates. Reduce the heat to medium and allow the dates to soften in the tea.

2 Using a wooden spoon, begin to stir and break down the dates until a paste is formed. Add the chopped Brazil nuts and stir to combine. Press it into the base of eight individual glasses or serving dishes.

3 To make the filling, place all the ingredients, except the chia seeds and rose petals, into a blender or food processor and blend on high for at least two minutes or until a smooth liquid has formed and all the cashews and dates have been puréed. Pour into a large mixing bowl and add the chia seeds. Use a whisk to make sure all the chia seeds have been evenly distributed into the liquid.

4 Pour the liquid mixture over the cheesecake base, then place in the refrigerator to chill and set. This will take an hour or you can leave it overnight. Decorate with rose petals or coconut flakes and serve.



Recipe from *The Yoga Kitchen* by Kimberly Parsons (Quadrille, £20)  
Photography ©Lisa Cohen. Kimberly lectures on CNM's Natural Chef and Vegan Natural Chef Diploma Courses at the College of Naturopathic Medicine.

# I-Mag giveaways

We showcase a selection of giveaways on offer to readers this issue.



## A.VOGEL BALANCE MINERAL DRINK

Whether you have just completed an intense workout in the gym, or perhaps you need something to help with that afternoon slump, Balance Mineral Drink could be a good option for you. A.Vogel has teamed up with *Nutrition I-Mag* to give 20 readers the chance to win a seven day pack of this naturally flavoured drink, worth £6.99. With a taste of fruity strawberries, Balance contains zinc, potassium, vitamin D3 and magnesium, which contributes to a reduction of tiredness and fatigue. Suitable for vegans and gluten free.

🍏 **I-Win:** We have 20 seven-day packs to give away.



## HIFAS DA TERRA MICO-FIVE

Mico-Five is a high potency synergistic formula of five organic mushroom extracts (reishi, maitake, shiitake, cordyceps and agaricus blazei). Rich in beta-glucans, triterpenes, amino acids and zinc, providing the immune system with an optimal response to infection and allergens. Adaptogenic properties also modulate an over-responsive immune system and regulate inflammation for a balanced immunity.

🍏 **I-Win:** We have five to give away.



## UDO'S CHOICE SUPER 8 HI COUNT MICROBIOTICS

Udo's Choice Super 8 Microbiotics contain eight bacterial strains designed specifically with a higher percentage and concentration of *L. acidophilus*. The specific strains used in Udo's Choice Super 8 Hi-Count Microbiotics have been specially chosen for their value to upper bowel health and have been formulated to the appropriate viable count. Each vegetarian capsule contains 42bn viable cells at time of manufacture and at least 31bn viable cells at expiry.

🍏 **I-Win:** We have five to give away.



## HIGHER NATURE IMMUNE +

Immune + from Higher Nature is a high potency combination of immune supporting nutrients with zinc and fruit extracts of blackcurrant, black elderberry and bilberry. Vitamin C and zinc help to maintain a strong immune system and are also important antioxidants that help protect your body cells from oxidative stress. Your body cannot produce or store vitamin C, and food storage, cooking and environmental factors, such as pollution, smoking, alcohol, ageing and today's demanding lifestyles all deplete levels.

🍏 **I-Win:** We have 20 pots of Immune + 30s to give away.





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Athlete Runner & Five Time World Silver Medalist  
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